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Draft
Environmental Impact Report

89.501E

Draft EIR Publication Date: January 31, 1991
Draft EIR Public Hearing Date: March 14, 1991
Draft EIR Public Comment Period: January 31 to March 18, 1991

Written comments should be sent to
The Environmental Review Officer
450 McAllister Street, Sixth Floor
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Attn: Barbara Sahm, Environmental Review Officer
89.501E - Transamerica III Project

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TO: *Department of City Planning,*
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TO: Distribution List for the Transamerica III Project Draft EIR

FROM: Barbara W. Sahm, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the Transamerica III Project

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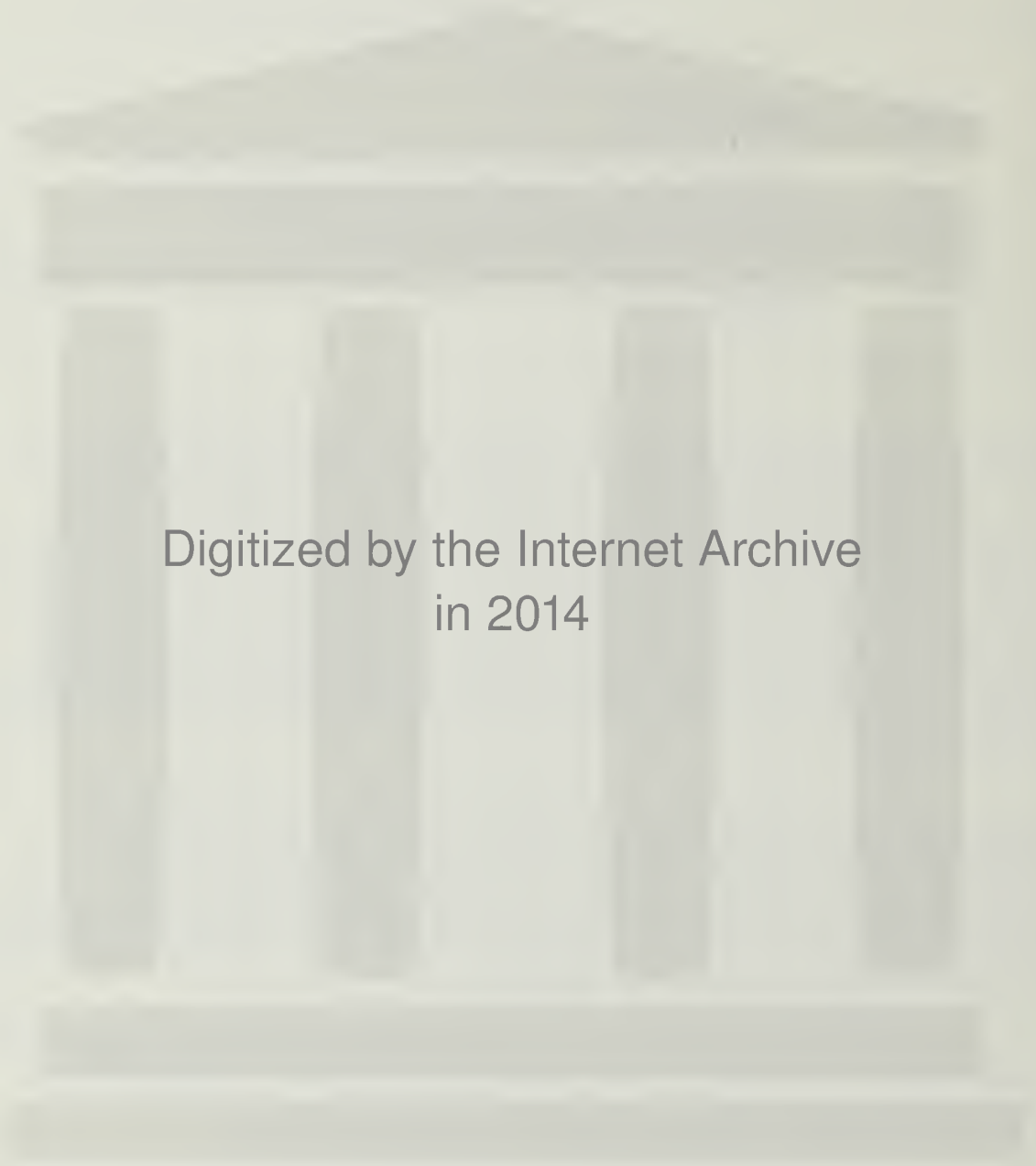
This is the Draft of the Environmental Impact Report for the Transmerica III project. A public hearing will be held on the adequacy and accuracy of this document on March 14, 1991. After the public hearing, our office will prepare and publish a document titled "Summary of Comments and Responses" which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments. It may also specify changes to this Draft EIR. Those who testify at the hearing on the draft will automatically receive a copy of the Comments and Responses document along with notice of the date reserved for certification (usually about nine weeks after the hearing on the draft); others may receive such copies and notice on request or by visiting our office. This Draft EIR together with the Summary of Comments and Responses document will be considered by the City Planning Commission in an advertised public meeting and certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Environmental Impact Report. *The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution.* It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Summary of Comments and Responses have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR to private individuals only if they request them.

If you want a copy of the Final EIR, please so indicate in the space provided on the next page and mail the request to the Office of Environmental Review within two weeks after certification of the EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final EIR.

Thank you for your interest in this project.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TRANSAMERICA III
ENVIRONMENTAL IMPACT REPORT

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I. INTRODUCTION

This Environmental Impact Report (EIR) evaluates the potentially significant environmental effects associated with the proposed Transamerica III project. The analyses contained herein address project-specific impacts and cumulative impacts to which the project would contribute.

This EIR incorporates information from Program EIRs that have been previously published. Most of this information is related to cumulative impacts of downtown growth contained in the *Mission Bay EIR* (Final EIR certified August 23, 1990, Case No. 86.505E), *South of Market EIR* (Final EIR certified December 7, 1989, Case No. 85.463E), and the Downtown Plan EIR (Final EIR certified October 18, 1984, Case No. EE81.3). The *Mission Bay EIR* covers the impacts of potential development in a 300-acre area just south of the greater downtown, from Townsend Street to Mariposa Street, east of the I-280 freeway. The *South of Market Plan EIR* analyzes impacts of development under the proposed South of Market Plan development controls and alternatives in the area generally south of Mission Street to the Mission Bay planning area and east of U.S. 101 to the Rincon Hill area east of Second Street. The Downtown Plan EIR analyzes the impacts of various development policy alternatives in the C-3-O (Downtown) zoning districts in San Francisco.

The *Mission Bay* and *South of Market Plan EIRs* include the most current estimates of employment growth for the Downtown & Vicinity and for the rest of the City; revised analysis and conclusions regarding overall cumulative transportation impacts in the future; and new cumulative air quality information. (The term "Downtown & Vicinity" means the C-3 District and the areas around it: South of Market, Mission Bay, South Van Ness, Civic Center, and the Northeastern Waterfront. See *Mission Bay EIR*, Vol. II, pp. IV.4-5). The Downtown Plan EIR contains other cumulative impact information regarding such topics as energy consumption; community services and seismic effects that also is applicable to the Transamerica III project.

Where information from these area-wide EIRs is presented in this project EIR, incorporation by reference with a summary is used pursuant to CEQA Sections 21061

and 21100 (see also State CEQA Guidelines Section 15150). Documents incorporated by reference are available for public review at the San Francisco Department of City Planning, 450 McAllister Street, San Francisco, the San Francisco Main Library and various branch libraries.

II. SUMMARY

A. PROJECT DESCRIPTION

Transamerica Realty Services, Inc., a subsidiary of the Transamerica Corporation, proposes to build a 10-story office building, to be called Transamerica III, at 545 Sansome Street / 501 Washington Street, at the northeast corner of the block bounded by Clay, Montgomery, Washington, and Sansome Streets. The project also would re-landscape the open space on the block, and consolidate and improve truck loading areas for the Transamerica II (505 Sansome Street) building and for the proposed Transamerica III building. The project site comprises Lots 35 and 36 and portions of Lots 32, 33 and 37 of Assessor's Block 207, in the City and County of San Francisco. The site of the new building contains three buildings which would be demolished: 501-505 Washington Street with about 2,000 gross square feet (gsf) of retail space; 517 Washington Street with about 2,050 gsf of retail / restaurant space and 22,500 gsf of office space; and 545 Sansome Street with about 56,600 gsf of office space. Also on the project block are the Transamerica Pyramid (Transamerica I) at 600 Montgomery Street, 505 Sansome Street (Transamerica II), Mark Twain Alley (a pedestrian mall and service alley, formerly Merchant Street) and Redwood Park (publicly accessible, privately owned open space).

Transamerica III would be about 135-feet tall, with nine floors of office space, a ground-floor retail level and two underground parking levels, on a 22,732.5 square foot site comprising Lots 35 and 36 and a portion of Lot 33. This building would contain about 135,775 gsf of office floor area, about 8,600 gsf of retail floor area, 6,700 gsf of mechanical floor area, 21,500 gsf of parking floor area and 6,000 gsf of loading and ramp area. The project would add about 56,900 gsf of net new office space and about 4,550 gsf of net new retail space to the site. About 510 persons would occupy the office space, including between 165 and 200 persons employed by the project sponsor or its affiliates. Approximately 15 new retail jobs would be provided. Taking into consideration existing office and retail space on the project site that was partially occupied by tenants as of late 1989, the project would effectively add about 113,500 gsf of new office space and 4,550 gsf of new retail space to the site, and new employment would be about 450 persons.

The project would include about 21,500 gsf of parking in two basement levels. Although the new parking would be constructed beneath the new building, the additional parking would serve the Transamerica III and Transamerica II buildings. The 21,500 gsf of new parking would constitute about 15.8% of the gross floor area of the Transamerica III building. Conditional Use authorization would be required for the approximately 11,995 square feet of parking in excess of the 7% of gross floor area (9,504 square feet) permitted by the *City Planning Code* as an accessory use.

Transamerica II, Lot 37, contains ground-level and basement level uses that would be altered by the project. A light well and basement courtyard in the southwest corner of Transamerica II would be converted to an indoor garden, adding 2,366 gsf of open space. This garden would be on the same level as, and open to, Redwood Park, would contain the same pavers and planters as the rest of the block. The project would construct a loading facility under Transamerica III to serve both Transamerica III and Transamerica II, allowing the existing Transamerica II at-grade, van-sized, loading space on Mark Twain Alley to be closed and converted to retail space, and Mark Twain Alley to be reserved for pedestrian use.

Redwood Park, Lot 33, west of the proposed new building, now comprises about 21,400 square feet of open space completed in 1972 as part of the Transamerica Pyramid. Redwood Park contains 69 Coast redwood (*Sequoia sempervirens*) trees planted in 1972. The project would re-landscape Redwood Park. The re-landscaping would include: removal of unhealthy redwood trees; temporary boxing of some healthy redwood trees, currently adjacent to the site of the proposed building, to allow construction of the foundation and basements; installation of new ornamental trees; and redesign of access in the park to provide direct access from Transamerica II and Transamerica III. Redwood Park would be replanted with some of the removed redwoods; the healthy redwood trees not replanted in Redwood Park would be donated to the Recreation and Park Department to be planted in Golden Gate Park. The project would install new pavers on all of the sidewalks and arcade areas on the block. The project would also replace the existing street trees on the block with new trees and plant about 50 additional street trees to provide a consistent streetscape on all sides of the block.

The project would require approval under *City Planning Code* Section 309 (for permit review in C-3 districts) and Sections 321 and 322 (for project authorization under the

Office Development Limitation Program) before issuance of site or building permits could occur.

Project construction would take about 18 to 24 months.

B. MAIN ENVIRONMENTAL EFFECTS

LAND USE (pp. 61 to 63)

The site is in the C-3-O Downtown Office District and the 200-S Height and Bulk District. The project would replace three existing office / retail buildings with a ten-story office building, new retail, re-designed open space, and new subsurface parking spaces The project would be similar in land use to the office / retail buildings in the vicinity. The project would differ in height from both the high-rise office buildings of the financial district to the south and east, and from the predominantly low-rise office and retail structures in Jackson Square Historic District to the north.

Forecasts in the *Mission Bay EIR* show a total of about 94,459,000 to 94,884,000 gsf. of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,500,000 to 25,900,000 gsf over the amount existing in 1985. The forecast accounts for demolition and new construction and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million sq. ft. of office space vacant in 1985 and another several million approved or under construction as of 1985. About 75% of the office space would be in the C-3 District. The proposed project would contribute about one-half of one percent of the total amount of office space added to the Downtown & Vicinity between 1985 and 2000.

SHADOW AND WIND (pp. 63 to 75)

The project would cast new shadow on streets, sidewalks and buildings in the project area, generally in morning and midday hours in spring, summer and fall. The project would add up to about 50% new shade to privately owned Redwood Park in morning and midday hours in spring, summer and fall. On Maritime Plaza, which is subject to Proposition K shadow restrictions, the project would add up to about 650 sq. ft. of shade at one time for up to 11 minutes, at about 7:00 p.m. PDT in August and 6:30 p.m.

in September, and about 6:00 p.m. PST in March and 7:30 p.m. PDT in April. The new shadow would complete the shading of the western part of Maritime Plaza at those times. For Maritime Plaza, the City Planning Commission and the Recreation and Park Commission have adopted criteria allowing no new shade during the times defined by Preparation K, one hour after sunrise to one hour before sunset at any time of year.

A wind tunnel simulation of the project site indicates that, of the 22 locations tested, there are nine points at which the wind speeds exceed, under existing conditions, the 11 mph-equivalent-wind-speed pedestrian-comfort criterion established in the Downtown Plan. With the project, wind speeds would exceed the criterion at seven of the 22 locations tested. One of these six points, within Redwood Park, wind speed would change from meeting the criterion to exceeding the criterion; at five of these six points where the criterion is now exceeded, the wind speed would be increased, by one or two mph. These five points are generally at the Washington-Sansome Streets intersection, and to the east and north of the project. At three points along Washington and Clay Street on the project block, existing exceedances would be eliminated. At one location on Washington Street east of Sansome, the hazard criterion is exceeded. The project would not change this condition. The critera were not exceeded at the other ten measurement points with the project.

CULTURAL RESOURCES (p. 75)

There is no recorded occupation or use of the project site during the Prehistoric, Spanish / Mexican, or Early American periods. The earliest recorded history at this site dates from the Gold Rush era when the Washington Street Wharf was built out about 275 feet into the bay from the original shoreline. Archival evidence indicates that two iron structures containing Baldwin's Bank, Beach, Stedden & Co., and the Evening Picayune, were built alongside a pier connecting the Washington Street Wharf with the Clay Street Wharf at the line of present day Sansome Street. These structures were consumed in the Great Fire of May 3-4, 1851. The Niantic, a beached storeship, was located near the project site, at the northwest corner of Clay and Sansome Streets, and it is possible that remnants of the ship or its contents may have been discarded within the project site. Niantic remains were unearthed during excavation for construction of Transamerica II, and scattered marine artifacts from the Niantic may also lie buried under the project site.

It is probable that architectural remains dating from the Gold Rush or City Building Periods, in varying states, may be encountered within the project site, including possible remains from the storeship Niantic.

URBAN DESIGN (pp. 76)

The project would demolish three buildings, ranging from one to eight stories. Because of the intervening high-rise buildings, the 10-story Transamerica III building would not be visible from long range viewpoints such as Potrero Hill, The San Francisco-Oakland Bay Bridge, or Twin Peaks. It would be smaller in scale and height than the existing high-rise office buildings on the project block, and transitional in scale and height between the high-rise buildings of the Financial District and the mainly low-rise buildings of the Jackson Square Historic District.

BIOLOGY (pp. 76 to 80)

Redwood Park includes 69 coast redwoods (*Sequoia sempervirens*) planted in 1972 as part of the Transamerica Pyramid project. The trees were not thinned as they matured; as a result of crowding, 25 redwood trees are considered unhealthy or structurally unsound. Proposed modifications to Redwood Park would include: removal of the 25 unhealthy redwoods; temporary boxing of 24 healthy redwoods, replanting of 17 healthy redwoods in the park; and installation of 52 ornamental trees (probably flowering cherry) in Redwood Park and Mark Twain Alley. The remaining seven, boxed, healthy redwoods would be donated by the project sponsor to the Department of Recreation and Parks. Twenty healthy redwoods would remain undisturbed on the site at their present locations. The remainder of the park would be relandscaped and new street trees would be placed along the sidewalk around the entire block.

TRANSPORTATION (pp. 80 to 103)

The project would generate about 2,730 net new person trips per day. About 450 new trips would occur during the p.m. peak period, 280 of these during the p.m. peak hour.

The future status of the Embarcadero freeway and the Clay Street and Washington Street ramps, closed since the October 1989 earthquake, is uncertain. If the Clay Street and Washington Street ramps were to remain closed, traffic from cumulative

development including that from the proposed project by the year 2000, would not change existing (1990, ramps closed) peak-hour vehicle Level of Service (LOS) A conditions at the Sansome Street / Clay Street, Sansome Street / Washington Street, and Montgomery Street / Clay Street intersections, but would degrade existing LOS A conditions at the Washington Street / Montgomery Street intersection to LOS B. If the Clay Street and Washington Street ramps were to reopen, by the year 2000 existing peak-hour LOS A conditions at the Sansome Street / Clay Street intersection and the Sansome Street / Washington Street intersection would degrade to LOS B. LOS A conditions at the Washington Street / Montgomery Street intersection would degrade to LOS D. LOS A conditions at the Montgomery Street / Clay Street intersection would not change.

The project would represent about 0.1% of total outbound regional auto demand on major corridors (bridges and freeways) in the year 2000. The project-generated traffic would not be measurable against day-to-day fluctuations in traffic volumes. However, cumulative travel demand is projected to exceed p.m. peak period capacity of some of the freeways serving San Francisco, resulting in shifts in travel modes (from automobiles to public transit and ridesharing).

The project would provide about 21,500 sq. ft. of parking, which could accommodate 100 vehicles with tandem valet operations, based on Department of City Planning standards for parking space size. Estimated equivalent daily parking demand from the project would be for about 80 spaces, resulting in a surplus of 20 parking spaces (total project demand [80] plus displaced public parking [0] minus proposed parking capacity [100] equals 20 space total surplus). The surplus spaces would help to reduce the parking deficit created by the absence of any parking in the Transamerica II building.

The proposed project would generate about 126 new pedestrian trips on the adjacent sidewalks during the noon 15-minute peak period and about 116 new pedestrian trips during the p.m. 15-minute peak period. Sidewalk operations currently in the unimpeded range at locations adjacent to the project site during the noon and p.m. peak hours would not change. Sidewalk operations on Clay Street would degrade from open to unimpeded conditions in the p.m. peak hour. Crosswalk operations, currently in the open or unimpeded ranges at locations studied for the project, would not change.

With cumulative development by the year 2000 (project plus other development), sidewalk and crosswalk operations would be in the unimpeded range for all locations

studied for the project, except for the crosswalks across Washington Street at Montgomery Street and Sansome Street at Washington Street during the p.m. peak hour, which would be in the open range.

The project would add about 790 daily trips to Muni and 490 daily trips to BART in the year 2000. The project would generate an annual cost deficit to Muni of about $18,346, assuming that the cost deficit remains $0.28 per additional ride. The extent to which this project would offset this deficit through its contributions to the General Fund, the Transit Impact Development Fee, and sales tax revenues is not known. The project would result in an annual net operating deficit to BART of about $126,470. BART's operating deficit per passenger is likely to decline in real terms as planned service improvements become operational in the future.

Both the *Mission Bay* and *South of Market Plan EIRs* show that by 2000, congested highway conditions caused by cumulative regional development would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

The transit demand from the project would represent about 0.1% of the total transit demand in the year 2000. Cumulative development in the year 2000, in conjunction with planned capacity increases of transit carriers, would be expected to cause crowded conditions for the following transit providers during the peak period: Muni Northeast Corridor, LOS D to E; BART Transbay, LOS E to F; and AC Transit, LOS C to E.

By 2020, all but the Southwest Muni screenline would be operating beyond Muni's load standard with projected cumulative demand. Additional service required could include new light rail service to the Geary Boulevard corridor to the Northwest, and to the Bayshore corridor in the Southeast area of the City. In 2020, crowded conditions during the peak period would also be expected for Golden Gate Transit (LOS D), BART Transbay (LOS F) and AC Transit (LOS E).

Sidewalk detours and curb lane closures on the Washington Street and Sansome Street project frontages would be necessary during construction. Construction truck traffic would be limited to the period before or after the a.m. and p.m. peak periods.

Construction traffic would slow traffic movements along Washington and Sansome Streets, including those of Muni buses.

CUMULATIVE AIR QUALITY (pp. 104 to 105)

Project-related vehicular traffic would add to cumulative regional pollutant emissions, and contribute to the continued failure of the Bay Area to attain federal ozone and CO standards. Project-related traffic alone would contribute less than one percent of transportation-related emissions resulting from development in the County, and thus would not pose a potentially significant effect on air quality. However, emissions of particulates generated by the project together with cumulative development would increase particulate concentrations, which would increase the frequency of fine particulate matter standard (PM_{10}) violations in San Francisco, with concomitant health effects and reduced visibility.

SEISMICITY (pp. 105 to 106)

The Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas and Hayward faults. Employment growth, such as that expected with the Transamerica III project, would result in larger numbers of persons being exposed in the future to earthquake hazards if an event occurred during the day. Since new buildings are subject to more stringent building and structural standards than are older buildings, persons working in buildings such as the proposed project would be relatively safer than those in some older buildings.

CONSTRUCTION NOISE (pp. 106 to 111)

Project construction would temporarily increase noise and vibration levels in the area of the site during the 18- to 24-month construction period. Highest average construction noise levels experienced in residences or offices and stores (depending on whether piledriving were to occur at night or during daytime hours) near the site could interfere with rest and speech. Pile driving and the operation of construction equipment could temporarily raise the noise level to 100 dBA with windows open and 85 dBA with windows closed at Fire Station No. 13 and to 94 dBA with windows open and 79 dBA with windows closed at the commercial uses across Washington Street from the project. Pile driving would cause vibrations, which are more irritating to some people than noise, in adjacent and nearby buildings. Should any other buildings be

under construction in the project vicinity at the same time as the project, noise levels would be expected to increase by another two to five dBA.

GROWTH INDUCEMENT (pp. 111 to 113)

Increases in downtown office space from the proposed project would contribute to growth of local and regional markets for housing, goods and services. Although employment growth would not be reflected directly in increases in demand for housing and City services to residents, it is expected that some downtown workers would want to live in San Francisco, intensifying the demand for housing, retail goods and services. The project would be built in a developed area, and would require no expansion to the municipal infrastructure not already under consideration.

C. MAIN MITIGATION MEASURES

Some of the measures identified that would mitigate potentially significant environmental effects are presented below. A full recitation of mitigation measures proposed as part of the project or proposed for consideration are presented on pp. 114 to 120.

MEASURES PROPOSED AS PART OF THE PROJECT

- Given the strong possibility of encountering the remains of cultural or historic artifacts within the project site, the sponsor would retain the services of an archaeologist. The Environmental Review Officer (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

  A pre-excavation testing program would be carried out. The program would be supervised by an archaeologist using a series of mechanical, exploratory borings, or other testing methods determined by the archaeologist to be appropriate. The archaeologist would supervise the testing at the site to determine the probability of finding cultural and historical remains. At the completion of the archaeological testing program, the archaeologist would submit a written report first and directly to the ERO, with a copy to the project sponsor, which describes the findings, assesses their significance and proposes appropriate recommendations for any additional procedures necessary for the mitigation of adverse impacts to cultural resources determined to be significant. If portions of the Niantic or other historic ship are found during testing or excavation, a maritime expert would also be retained.

Following the pre-excavation testing program, an archaeologist would supervise a program of on-site monitoring during site excavation. The archaeologist would record observations in a permanent log. Should cultural or historic artifacts be found following commencement of excavation activities, the arcaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific mitigation measures, if necessary. The monitoring program, whether or not there are any finds of significance, would result in a written report to be submitted first and directly to the ERO, with a copy to the project sponsor.

Excavation or contruction activities which might damage discovered cultural resources would be suspended for a total maximum of four weeks over the course of construction to permit inspection, recommendation and retrieval, if appropriate.

If cultural resources of potential significance are discovered, an appropriate security program would be implemented to prevent looting or destruction. Any discovered cultural artifact assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB, would be placed in an appropriate repository designated for such materials.
Copies of the draft reports prepared according to these mitigation measures would be sent first and directly to the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board for review. Following approval of the reports by the ERO and the President of LPAB, a report is to be sent to the California Archaeological Site Survey Office at Sonoma State University. The Office of Environmental Review shall receive three final copies of the final archaeological findings report.

- In order to alleviate potential delivery-truck double-parking that would result from having fewer loading spaces than calculated demand, the project sponsor would provide the equivalent of one additional loading space in the subsurface parking garage (Four tandem-valet parking spaces would be converted to two van-sized loading spaces, which according to the City Planning Code, would substitute for the one additional loadng space that would be needed to meet expected demand.)

- During the construction period, construction truck movement would be permitted only before 6:30 a.m. or after 9:00 a.m. and before 3:30 p.m. or after 7:00 p.m. to minimize peak-hour traffic conflicts and to accommodate queuing of Muni buses prior to the peak hours. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Department of Parking and Traffic, the Fire Department, Muni and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects.

- The construction contract would require that the project contractor muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise would not exceed limits stated in the City's Noise Ordinance.

- The project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The project sponsor would require the construction contractor to schedule and limit pile driving activity to result in the least disturbance.

- A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by a California-licensed geologic engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project.

D. ALTERNATIVES TO THE PROPOSED PROJECT (pp. 123 to 140)

ALTERNATIVES NOT INCLUDED

No alternative site analysis was conducted for this EIR for a number of reasons. The policy to concentrate office development in the Downtown C-3 districts has been reaffirmed many times by the City Planning Commission and Board of Supervisors since 1985. Areas situated adjacent to the Downtown areas (the "ring neighborhoods") have been rezoned so as to protect those areas from the encroachment of office development, and to ensure that the Downtown continues to offer the highest commercial density in San Francisco. Thus, any shift of office development outside of the C-3 areas would constitute more than a mere rezoning, but would require a major overhaul and reconsideration of the planning policies for the entire east side of the City. As part of approving the Downtown Plan and implementation ordinances, the Board of Supervisors also established a limit on the amount of office space that could be approved in San Francisco (City Planning Code Sections 320-324). This "annual limit" in effect establishes a policy that some regional office demand be accommodated in San Francisco but that some also be accommodated elsewhere in the region on sites outside San Francisco. For these reasons, it would be infeasible to consider any alternative sites for this project outside the C-3 districts or outside the jurisdiction of the City. Finally, an analysis of other sites within the C-3 districts would be infeasible since there are no other sites within the downtown capable of eliminating the main impacts of this project.

ALTERNATIVE A: NO PROJECT

This alternative would entail no change to the project site. The proposed project would not be built there. The existing 545 Sansome Street, 517 Washington Street and 501-505 Washington Street buildings would be retained, rather than demolished for the project. This alternative could include the re-occupancy of the 545 Sansome Street building by the project sponsor.

If the No-Project Alternative were implemented and existing buildings remained at their current level of occupancy, none of the impacts associated with the project would occur. If the project sponsor were to re-occupy the 545 Sansome Street building, some of the impacts associated with the project would be eliminated; others would be reduced in proportion to the lesser population on the project site compared to the project. Impacts attributable to building occupants (such as traffic, and energy consumption) would differ from conditions described in the Environmental Setting sections of this report. The 545 Sansome Street building has not been seismically reinforced, nor would such reinforcement be required under applicable building codes. If the building were re-occupied, tenants would be exposed to a potentially greater risk in the event of an earthquake than would tenants of the project, because of the increased efficacy and stringency of current building codes over older ones.)

ALTERNATIVE B: NO NEW SHADOW ON MARITIME PLAZA

This alternative would not add new shadow to Maritime Plaza. The building would be the proposed project with two fewer office floors (eight, compared to ten with the project). This alternative would contain 114,800 gsf of office space (compared to 136,000 gsf with the project), and the same amounts of retail and mechanical space as the project. This alternative would add about 35,700 gsf of office space to the site. Based on occupied existing uses, this alternative would add the equivalent of about 92,300 gsf new office space (compared to 113,500 gsf with the project) to the site. The FAR of this alternative would be 5.6:1, compared to 6.5:1 with the project.

Because this alternative would be 23 feet shorter than the project, shadow from it would be less than with the project. This alternative would not add new shadow on Maritime Plaza, a property under the jurisdiction of the Recreation and Park Department, during times specified by Proposition K (one hour after sunrise to one hour before sunset at any time of year). As with the project, this alternative would cast shadow on Redwood Park, a publicly accessible open space owned by the project sponsor. Total travel demand, air quality and energy impacts of this alternative would be less than those of the project because of its smaller size. Nevertheless, traffic and air quality effects on local intersections would be the same as with the project, because this alternative contains the same amount of parking as the project. Total parking demand generated would be less than that for the project. The potential, during construction, of encountering subsurface cultural resources or subsurface hazardous

materials would be similar to the project, because a similar amount of excavation would be required. Construction noise and air quality impacts would be of shorter duration because the construction period would be shorter. This alternative would result in net increase in on-site employment of about 370 persons, compared to about 450 with the project. It would generate a housing requirement of about 14 new dwelling units in San Francisco (based on the OAHPP formula), compared to 22 units with the project. Growth-inducing impacts of this alternative would be similar to those of the project, but of a lesser magnitude.

ALTERNATIVE C: PROJECT WITH NO CONDITIONAL USE AUTHORIZATION REQUIRED FOR PARKING

The project as proposed would include about 21,500 gsf of parking area and wouldrequire conditional use authorization for the 11,995 gsf parking in excess of the 7% of total gross floor area permitted as an accessory use. This alternative considers a building containing 9,504 gsf of parking. All other attributes of this alternative would be the same as with the project. The reduction in parking area to 7% of gross floor area would make all parking an accessory use not requiring conditional use authorization from the City Planning Commission. The 9,504 gsf of parking would accommodate 44 vehicles under tandem-valet operations using Department of City Planning standards for parking space size, compared to 100 vehicles with the project.

Construction noise, air quality and transportation impacts would be less than with the project as proposed, because this alternative would require excavation of one basement level, compared to two with the project. The potential, during construction, of encountering subsurface cultural resources or subsurface hazardous materials would be less than with the project, because of the lesser extent of excavation required for this alternative. Travel demand, air quality and energy impacts associated with on-site uses would be the same as those of the project, because the amount of office and retail space would be the same as with the project. The net parking demand generated by this alternative would also be the same as that generated by the project. Traffic and air quality effects on local intersections, however, would be less than with the project, because this alternative would have fewer on-site parking spaces than the project. (If existing parking in the Pyramid garage were operated based on Department of City Planning standards assuming tandem-valet parking, that garage could accommodate Transamerica III parking demand with this alternative, and its effects on local traffic would be similar to those of the project.)

ALTERNATIVE D: PROJECT WITH NO PARKING

The project as proposed would include 21,500 gsf of parking area, none of which is required by the *City Planning Code*. This alternative considers a building with all of the characteristics of the proposed project, except that it would contain no parking. The consolidated, underground loading area serving the project and the existing Transamerica II building, and connected by an underground service tunnel to the building Transamerica II, would not be provided. One loading dock would be provided in the Mark Twain Alley facade of Transamerica III. The Transamerica II at-grade loading dock in Mark Twain Alley would be retained. Mark Twain Alley would not be improved as a pedestrian mall. Excavation for this alternative would be limited to excavation required for elevator pits and mechanical areas.

Impacts on views, shadows, wind, urban design, biology and growth inducement would be the same as with the proposed project. Construction noise, air quality and transportation impacts would be less, because this alternative would require less excavation than would the project. The potential, during construction, of encountering subsurface cultural resources would be less than with the project, because of the lesser amount of excavation required for this alternative. Travel demand, air quality and energy impacts associated with on-site uses would be the same as those of the project, because the amount of office and retail space would be the same as with the project. The parking demand generated by this alternative would also be the same as that generated by the project. Traffic and air quality effects on local intersections, however, would be less than with the project, because this alternative would have no on-site parking spaces, compared to 100 with the project. (If existing parking in the Pyramid garage were operated based on Department of City Planning standards assuming tandem-valet parking, that garage could accommodate Trasamerica III parking demand with this alternative, and its effects on local traffic would be similar to those of the project.)

ALTERNATIVE E: RETAIN 545 SANSOME AND 501-505 WASHINGTON AND CONSTRUCT 47,500 GSF OFFICE AT 517 WASHINGTON

This alternative would demolish 517 Washington Street, an office and retail building constructed in 1910, and would retain 545 Sansome Street, a reinforced-concrete building constructed in 1930, and 501-505 Washington Street, a retail building

constructed in 1975. (The project would demolish all three buildings on the project site to construct one building.) This alternative would construct a total of 47,500 gsf of new office space at 517 Washington Street, would add 25,000 net new gsf of office space to the project site, and would have an FAR of 4.6 (compared to 6.5 with the project). Based on existing space leased to tenants in late 1989, this alternative would add 81,600 gsf of net new occupied office space to the site. This alternative would not include the rounded roof form associated with the project. No parking would be provided by this alternative. One at-grade loading space would be provided accessible from Mark Twain Alley. Alternative E would not relandscape Redwood Park, construct an indoor open space in Transamerica II, improve Mark Twain Alley, replace street trees on the project block or repave the project block. The approximately 1,000 sq. ft. of open space the *City Planning Code* would require of Alternative E would be provided in a location to be determined.

This alternative would retain the 545 Sansome Street building, rated "C" in *Splendid Survivors* and unrated in the *Downtown Plan* or *City Planning Code* surveys. Impacts on views, shadows, wind, employment, housing demand , biology and growth inducement would be less than with the proposed project. About 400 people would be employed on the project site, about 150 people fewer than with the project and an increase of about 300 employees over existing conditions. Two buildings would cause increased energy and public services impacts as a result of the need to maintain two, separate, functioning building cores. Construction noise, air quality and transportation impacts associated with this alternative would be less than with the project because of the lesser depth and areal extent of excavation associated with the construction of a building on less than half of the project site. During construction the potential of encountering subsurface cultural resources or subsurface hazardous materials would be less than with the project, because of the lesser extent of excavation required for the alternative.

Travel demand, parking demand and air-quality impacts associated with on-site uses in this alternative would be less than with the project, because the amount of office space, retail space and employment on the site would be less than the project. Traffic and air quality effects on local intersections would be less than with the project, because this alternative would have no on-site parking spaces, compared to 100 with the project. The 545 Sansome Street building has not been seismically reinforced, nor would such

reinforcement be required under applicable building codes. If the building were re-occupied, tenants would be exposed to a potentially greater risk in the event of an earthquake than would tenants of the project, because of the increased efficacy and stringency of current building codes over older ones.

ALTERNATIVE F: TALLER BUILDING WITH SMALLER FLOOR SIZES AND, LARGER ADDITION TO REDWOOD PARK

This alternative would demolish all three buildings on the project site and construct a 17-story (220-ft. tall) office building with approximately 163,000 gsf of office space and 4,750 gsf of retail space on Lot 35 and part of Lot 36. The project would be a 10-story office building on Lots 35, 36 and a portion of Lot 33. The smaller floorplate of this alternative it would not remove 790 sq. ft. of existing Redwood Park as would the project and would also provide about 5,250 sq. ft. of additional open space in Redwood Park. Alternative F would thus provide a total of about 26,650 sq. ft. of open space in Rewood Park on the project block, compared to about 20,610 sq. ft. with the project. Both Alternative F and the proposed project would have about 2,400 sq. ft. of open space in the Transamerica II greenhouse.

The parking and loading configurations would be the same as for the project. This alternative would require conditional use authorization for the 10,100 gsf of parking area in excess of the 7% (11,400) of office square footage permitted by the *City Planning Code* as an accessory use and would have an FAR of 7.6:1 (compared to 6.5:1 with the project). This alternative would add 83,900 gsf of new office space and 700 gsf of new retail space to the project site, compared to 56,900 gsf of new office space and 4,550 gsf of new retail space with the project. Based on occupied existing uses, this alternative would add the equivalent of about 140,500 gsf of office space and 700 gsf of retail space to the project site, compared to 113,500 gsf and 4,550 gsf with the project.

This alternative would shade a greater area of Maritime Plaza than would the project, shading about 1,500 sq. ft. southeast of the western portion of the plaza at about one hour before sunset in August, September, and March and April. The alternative would exceed Proposition K criteria for no new shadow on Maritime Plaza during the times specified by Proposition K. This alternative would have similar wind effects to those of the proposed project.

This alternative would result in the same potential as the project that subsurface cultural resources or hazardous materials would be encountered during construction, because the sizes and configurations of its subsurface levels would be about the same as with the project. This alternative would add about 540 new jobs on the site, compared to about 450 with the project. Construction noise, air quality and transportation impacts would be about the same as with the project but could last somewhat longer. Travel demand, parking demand, air quality and energy impacts of this alternative would be more than with the project, because this alternative contains about 20% more office space than the project. This alternative would be about 85 feet taller than the project; therefore, it would be more visible than the project in mid- and long-range views of the area. Because of the alternative's greater height, it would be more visible from the streets, view corridors, and open space surrounding the project site including Maritime Plaza.

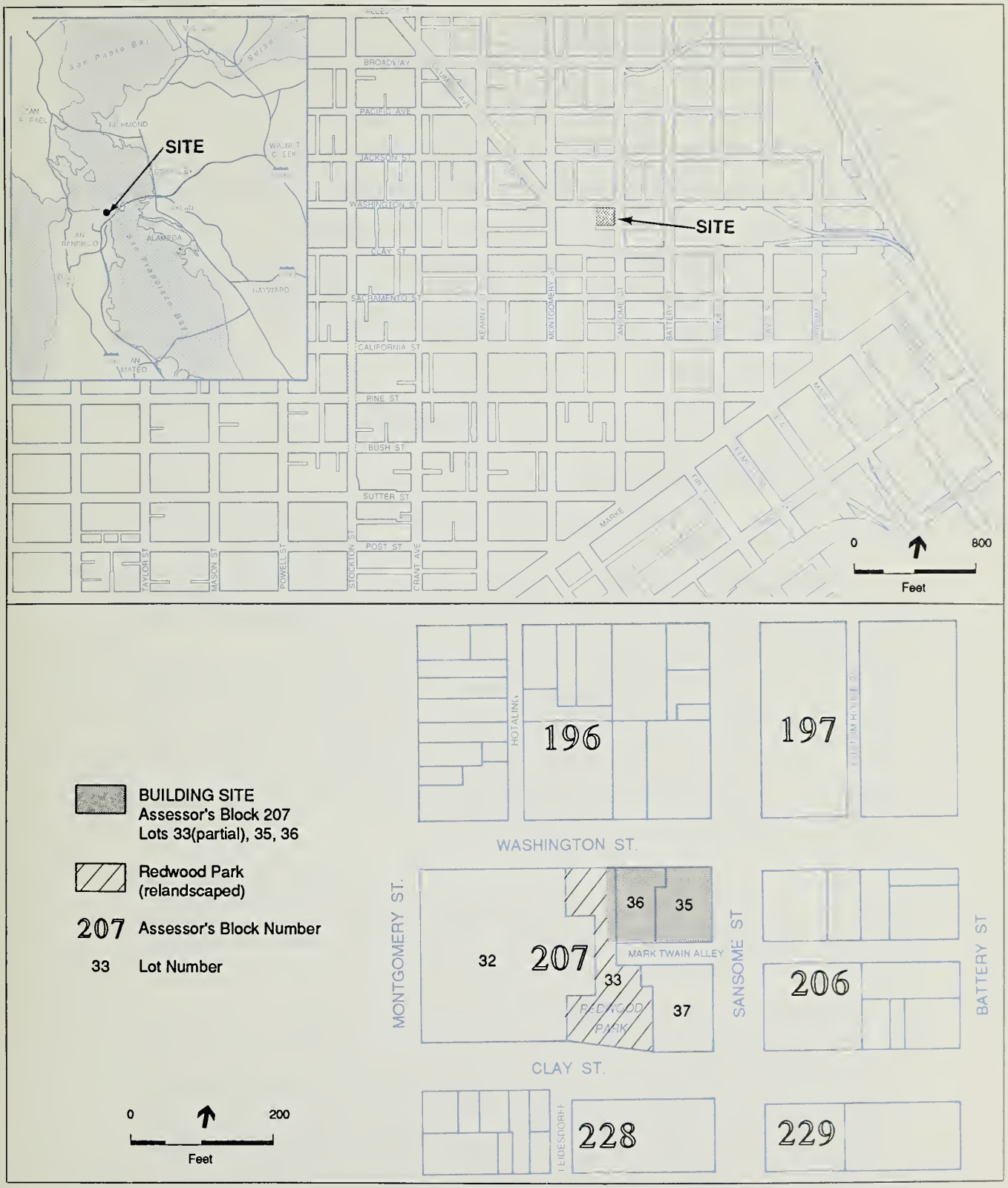
III. PROJECT DESCRIPTION

A. PROJECT SPONSOR'S OBJECTIVES

Transamerica Realty Services, Inc., a subsidiary of the Transamerica Corporation, proposes to construct a ten-story, 135-ft.-tall office and retail building at 545 Sansome Street / 501 Washington Street, to be called Transamerica III, at the northeast corner of the block bounded by Clay, Montgomery, Washington, and Sansome Streets. The project sponsor also proposes to expand and modify the open space and improve pedestrian areas on the block. The project sponsor's objectives are: to develop high-quality office and retail space on the Transamerica headquarters block for Transamerica affiliates and other office users; to redesign Redwood Park open space; to better integrate the park with the surrounding Transamerica buildings; to improve the Mark Twain Alley pedestrian mall; and to provide subsurface loading and parking for the project and the existing adjacent Transamerica II building. The project architect is Skidmore, Owings & Merrill of San Francisco; the project landscape architect is MPA Design of San Francisco; the project artists are Douglas Hollis and Anna Valentina Murch of San Francisco.

B. PROJECT LOCATION

The proposed building would be located at 545 Sansome Street / 501 Washington Street, in the City and County of San Francisco, and would occupy all of Lots 35 and 36 and a portion of Lot 33 of Assessor's Block 207. Assessor's Block 207 is bounded by Washington Street on the north, Sansome Street on the east, Clay Street on the south and Montgomery Street on the west (see Figure 1). The 22,732.5-square-foot site for the new building fronts the south side of Washington Street and the west side of Sansome Street, and is bounded by Redwood Park and Mark Twain Alley. Lots 35 and 36 are currently occupied by three buildings: 501-505 Washington Street, 517 Washington Street, and 545 Sansome Street. The Transamerica Pyramid, 600 Montgomery Street, occupies Lot 32; 505 Sansome Street, Transamerica II, occupies Lot 37; and Redwood Park occupies Lot 33. The Transamerica Corporation and its affiliates own or ground-lease all of the lots on the project block. The Transamerica Pyramid and Redwood Park occupy the western half of the block; Transamerica II occupies the block's southeastern quadrant. Transamerica III would occupy the northeastern quadrant.



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 1
Project Location

The project would replace three existing structures: 501-505 Washington Street, 517 Washington Street and 545 Sansome Street. 501-505 Washington Street, built in 1975, is a one-story retail building at the corner of Washington and Sansome Streets. Retail shops and a restaurant, containing a combined 2,000 gross square feet (gsf) occupy this building. 517 Washington Street is a four-story brick building, constructed in 1910, which houses 2,050 gsf of retail / restaurant uses on the ground floor and 22,500 gsf of office uses on the upper three floors and basement. 545 Sansome Street, constructed in 1930, is a nine-story-plus-penthouse building, containing 56,600 gsf of office space. 545 Sansome Street was partially occupied as office space until November 1987; it has since been used for temporary storage. No parking is provided in any of these three existing buildings.

C. PROJECT CHARACTERISTICS

Project characteristics are summarized in Table 1. The 135-ft.-tall, 10-story building would have nine floors of office space, a ground-floor retail level, and two basement levels of parking and loading uses. The new building would consist of three sections: base, shaft, and an arched (vaulted) roof form. The building would be built to property lines along Washington Street, Sansome Street and Mark Twain Alley and would extend 7.5 feet into Redwood Park and remove about 790 sq. ft. of the park. At the base, the second floor, and the ninth floor, windows would be recessed; the remainder of the windows would be set flush with the building plane. Floor plans and elevations are shown in Figures 2 to 6, pp. 25 to 29.

The building would contain about 148,000 gross square feet (gsf) of floor area to be occupied by principal uses (office, parking in excess of 7% permitted as accessory use). This would result in a Floor Area Ratio (FAR), the ratio of principal uses to site size, of about 6.5:1 for the 22,732.5-square-foot development site.

The building would include about 136,000 gsf of office floor area, 8,600 gsf of retail floor area, 21,500 gsf of parking area (about 100 spaces), 6,000 gsf building storage area, 6,000 gsf of loading and ramp area and 6,700 sq. ft. of mechanical floor area. The project would result in a net increase of about 56,900 gsf of new office space and a net increase of 4,550 gsf of new retail space on the project site. The existing buildings on the site contain combined totals of about 79,100 gsf of office space and 4,050 gsf

TABLE 1: PROJECT CHARACTERISTICS

Proposed Uses	Gross Floor Area (gsf) /a/	Total Project Area (gsf)
Subsurface:		
Parking	11,995 /b/	21,500 /c/
Mechanical/Storage	0 /a/	12,700
Loading/Ramps	0 /a/	6,000
Above Grade:		
Retail	0 /a/	8,600 /d/
Lobby	0 /a/	4,000
Office	135,775	135,775
Total	147,770 gsf	188,575 gsf

New Open Space Provided by Project: 1,610 sq. ft. /e/

Site Size: 22,732.5 sq. ft.

Number of Stories /f/	
Retail/Lobby	1
Office	9
Total	10

Height and Bulk Measurements (ft.)	Allowable	Proposed
Height	220	135
Bulk		
Lower Tower /g/		
Length	160	145
Diagonal	190	190
Upper Tower /g/	N/A	N/A

Floor Area Ratio (FAR)

Allowable	9.0:1/18.0:1 /h/
Proposed	6.5:1

/a/ Gross floor area is the area of a building applicable to Floor Area Ratio (FAR) calculations. It is the unit of floor area measurement used in the Proposition M Annual Office Development Limitation Program that expresses the amounts of office space that can be developed in any given year in San Francisco. In Section 102.9(b)1-16 of the *City Planning Code*, exclusions from gross floor area in the C-3-0 (SD) district are defined. Examples are convenience. retail and personal service space (not to exceed 75% of ground floor interior and open space areas), pedestrian circulation space located on ground floor and mezzanine levels, accessory parking area, building service space, mechanical space and building storage space.

/b/ 11,995 sq. ft. of parking is included in computing the project FAR because it would represent an excess of the 7% (9,504 square feet) of gross floor area permitted by the *City Planning Code*, Section 204.5(c), as an accessory use.

/c/ With entry and exit ramps excluded, there would be about 21,500 gsf of parking space (15.8% of the gross floor area of the building). See notes /a/ and /b/.

/d/ The project would include about 8,600 gsf of retail space on the ground floor. The net increase in retail space on the site would be 4,550 gsf.

TABLE 1: PROJECT CHARACTERISTICS (Continued)

/e/ The project would remove 790 sq. ft of open space from Redwood Park to become the western portion of the site of Transamerica III and would construct about 2,400 sq. ft. of greenhouse open space in the west side of Transamerica II. With the completion of the project, the block would contain 23,010 sq. ft. of open space, consisting of the original Rewood Park area of 21.400 sq. ft., reduced by 790 sq. ft. for the Transamerica III building site, and increased by about 2,400 sq. ft. of greenhouse open space in Transamerica II. (For open space requirement, see p. 31.)

/f/ Excluding basement levels, containing parking, loading spaces, building storage, and mechanical space: including a penthouse office level.

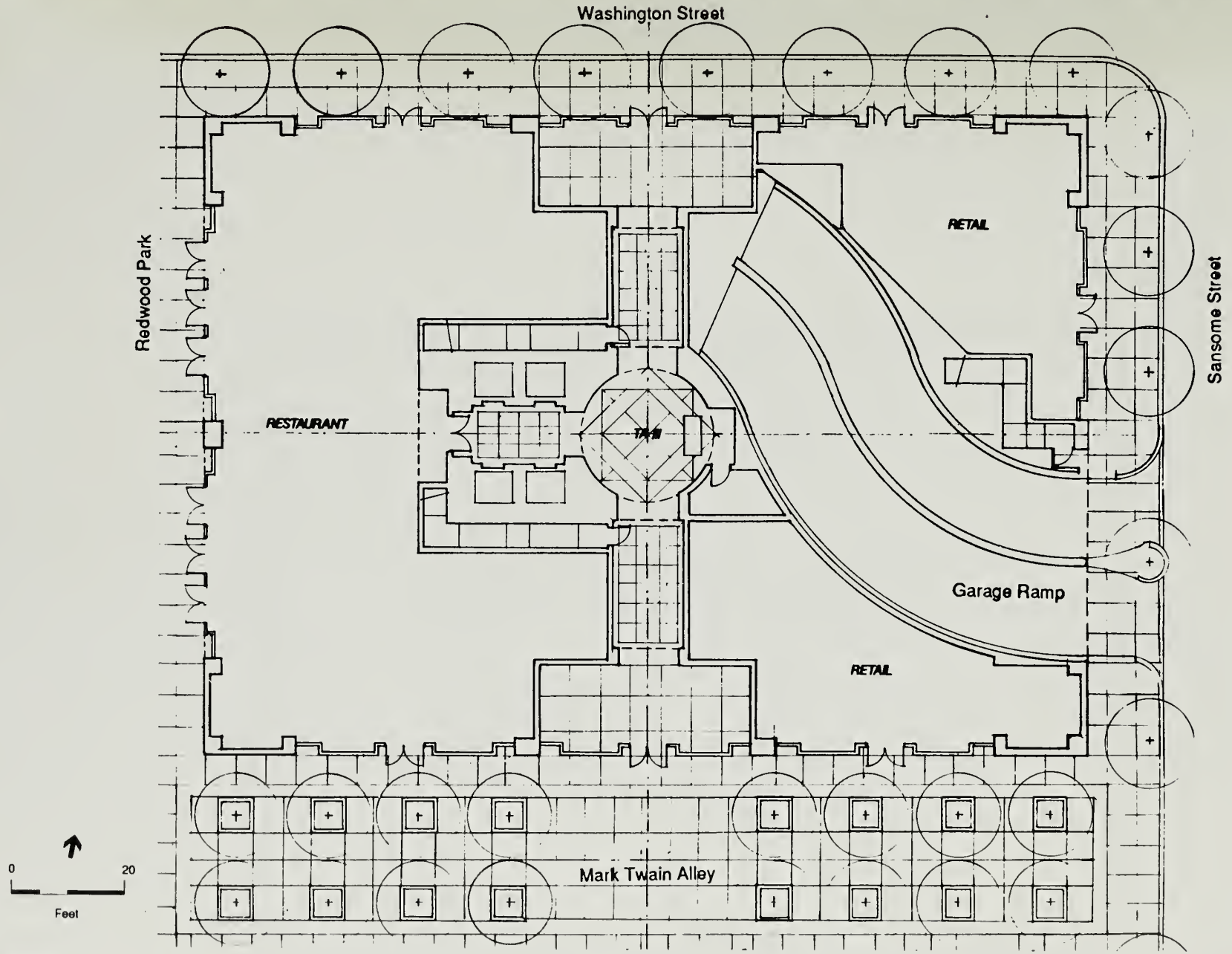
/g/ The project site is located in the 200-S Height and Bulk district. Under *City Planning Code* Section 263.5, additional height up to ten percent (220 ft. total) may be allowed, provided that the volume of the upper tower extension is reduced. The lower tower is the portion of a building between the base and 160 ft. above its base. The upper tower is the portion of a building between 160 ft. above the base and the height limit. The project would be 135 ft. tall; therefore, none of the upper tower restrictions would be applicable to the project. The project would not exceed the 200 ft. height limit.

/h/ The basic Floor Area Ratio (FAR) limit for the site is 9.0:1. Section 128 of the *City Planning Code* provides for the transfer of development rights (TDR) for the project site allowing FAR to be increased up to a maximum of 18:1. The project would require no TDR.

SOURCE: Environmental Science Associates, Inc., and Skidmore Owings & Merrill.

of retail space. When analysis of the project was begun in early 1990, none of the 56,600 gsf of office space in 545 Sansome was occupied. So that the EIR analysis would examine changes resulting from the project, space leased to tenants as of late 1989 and its impacts were considered part of the project setting. Existing space not leased was assumed to have no impacts on the project setting. Where appropriate, particularly for transportation effects, impacts of the project were considered in this EIR to result from the net increase of 113,500 gsf of occupied office space and 4,550 gsf of occupied retail space at the site.

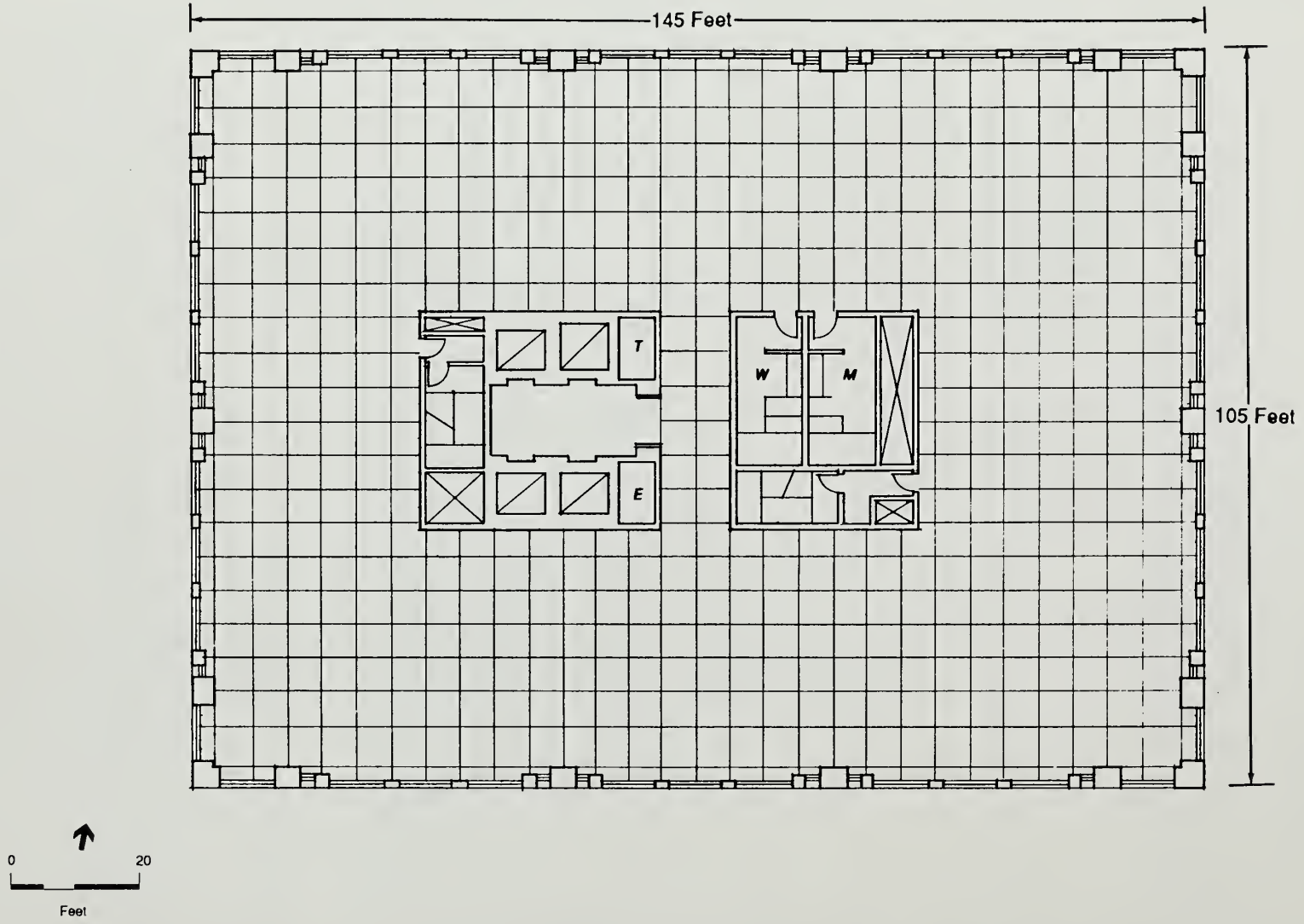
Two subsurface parking levels would be constructed under Transamerica III. The approximately 21,500 gsf of parking area would serve both Transamerica III and Transamerica II. A 6,000 gsf truck loading area, also serving both Transamerica III and Transamerica II, would be located on the first basement level in the new building. This truck loading area would provide two parallel 35-ft.-long and 12-ft.-wide loading spaces with a minimum of 14-ft. vertical clearance and would be accessed from Sansome Street by a ramp having a minimum of 14-ft. vertical clearance, and two 20-ft.-long and eight-ft.-wide van-size loading spaces, with a minimum of seven ft.



SOURCE: Skidmore, Owings and Merrill

Transamerica III ■

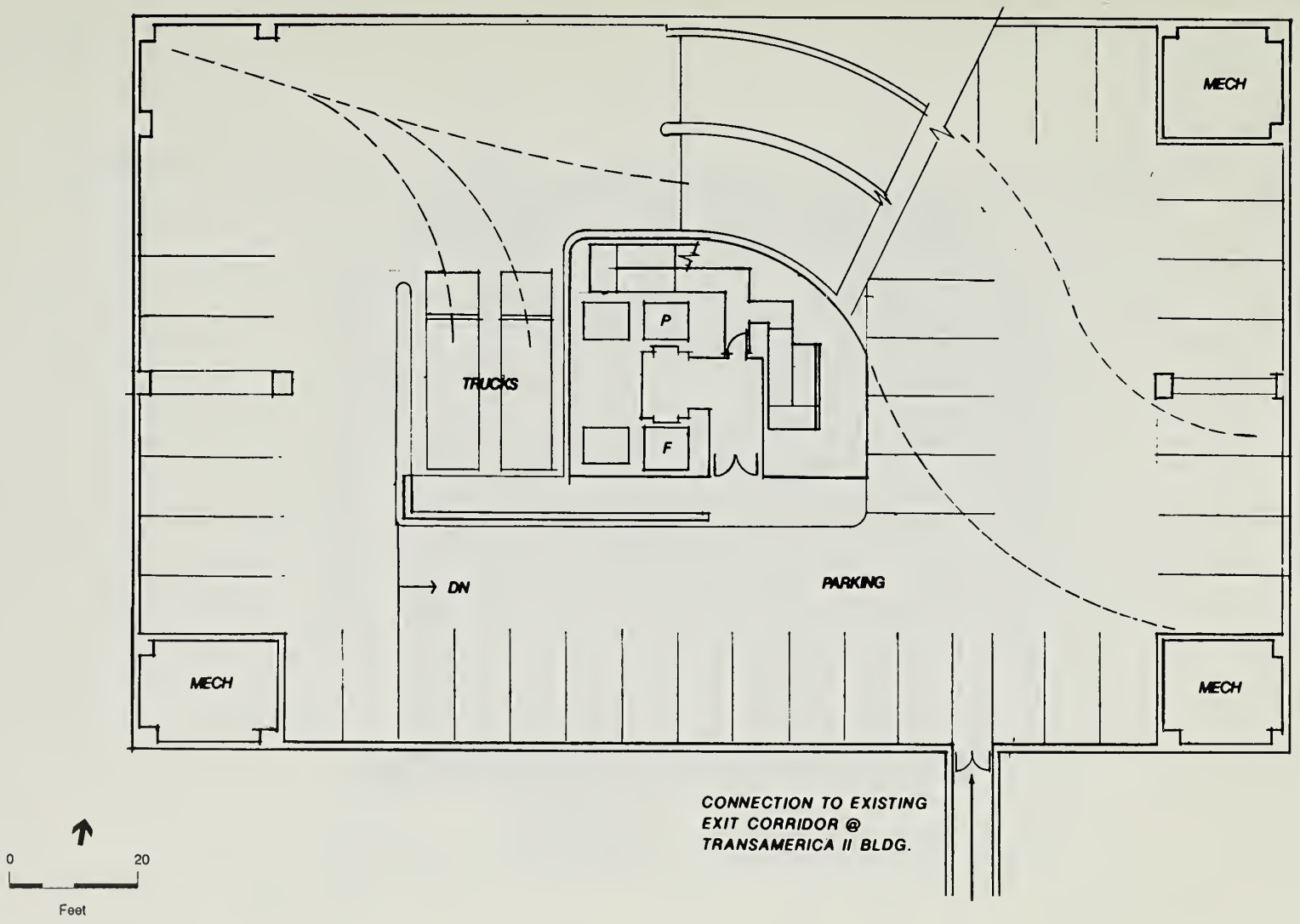
Figure 2
Ground-Level Floor Plan



SOURCE: Skidmore, Owings and Merrill

Transamerica III ■

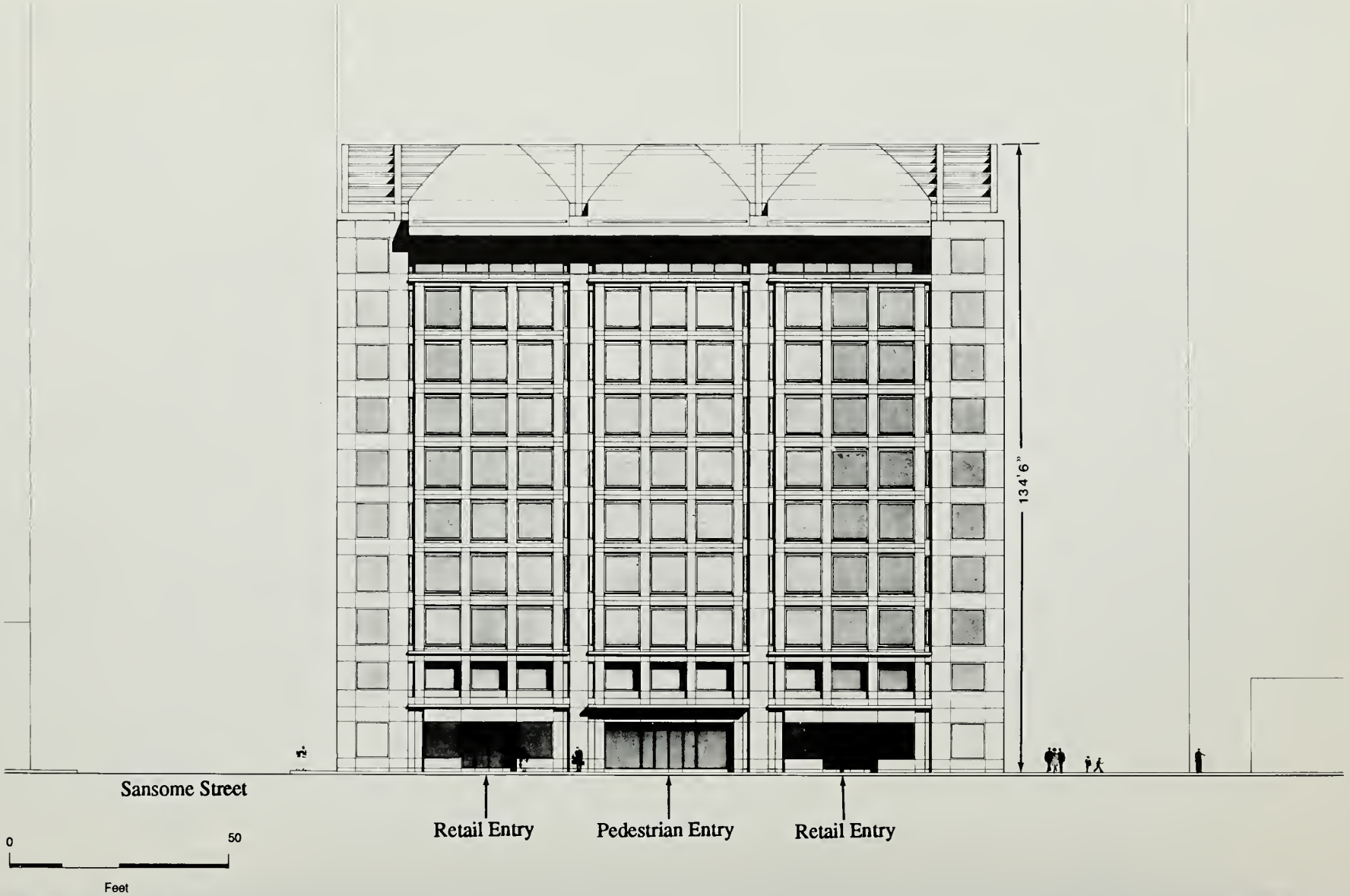
Figure 3
Typical Building Floor Plan



SOURCE: Skidmore, Owings and Merrill

Transamerica III ■

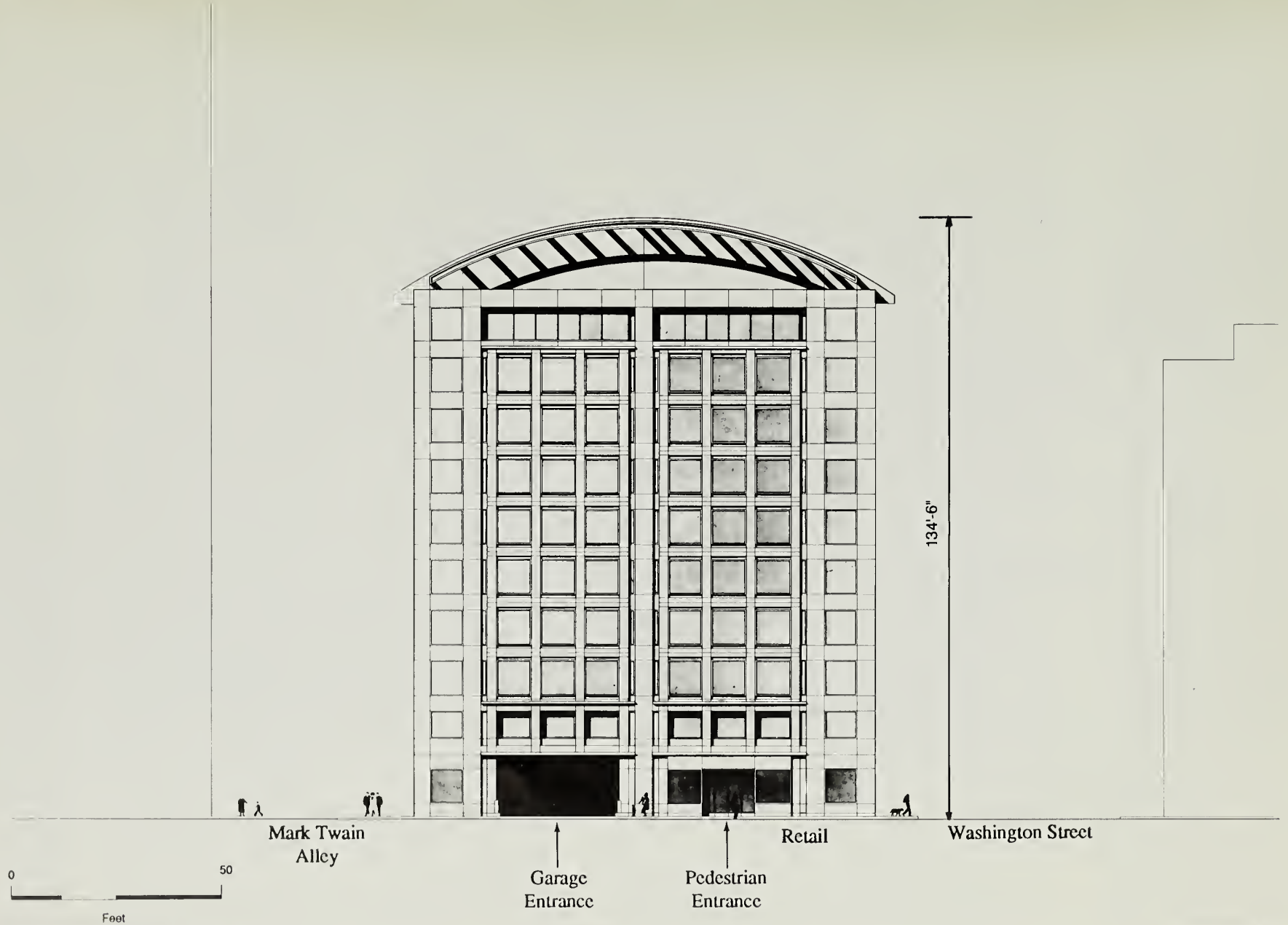
Figure 4
First Basement-Level Floor Plan



SOURCE: Skidmore, Owings & Merrill

Transamerica III ■

Figure 5
Washington Street Elevation



Transamerica III ■

SOURCE: Skidmore, Owings and Merrill

Figure 6
Sansome Street Elevation

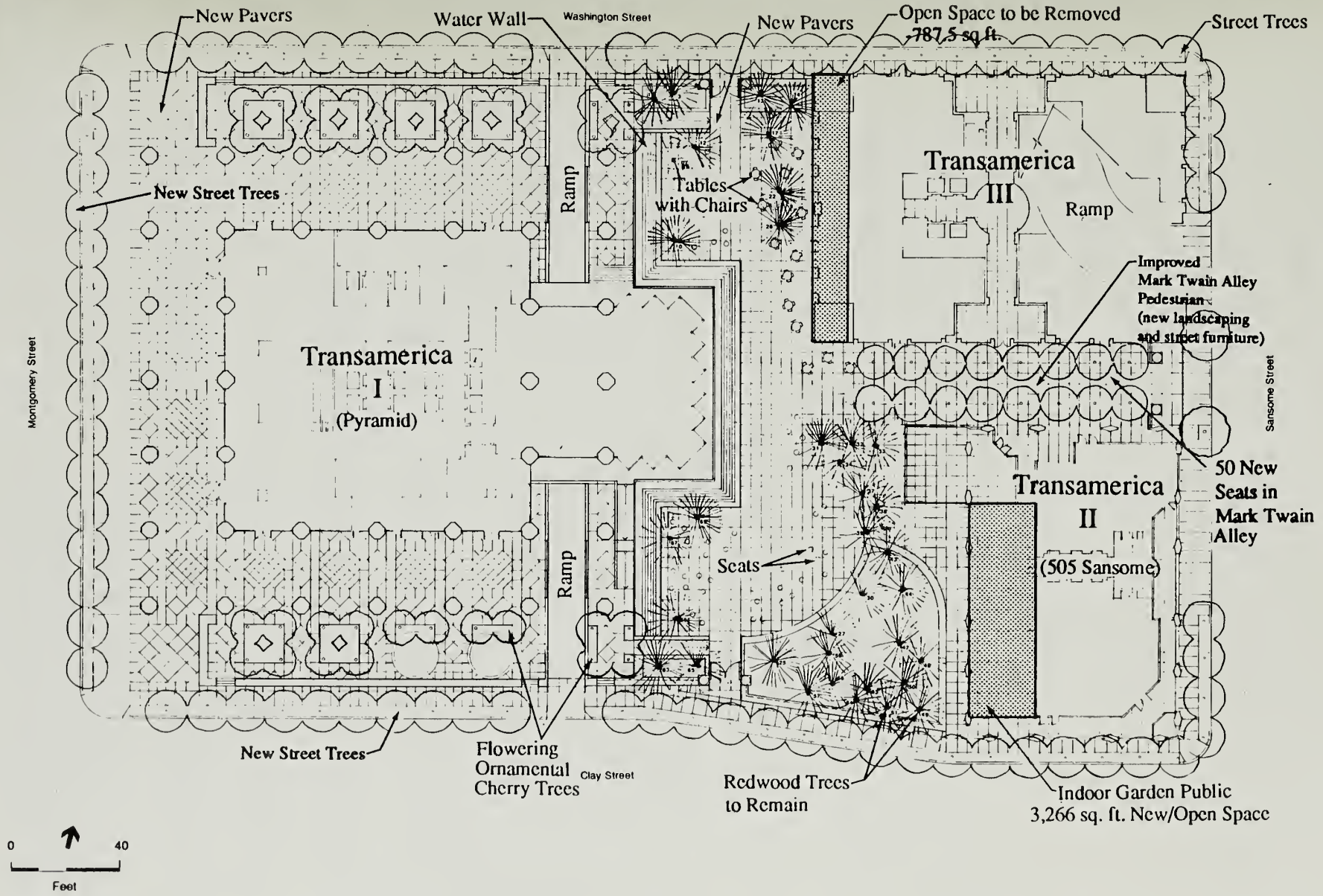
vertical clearance. An eight-ft.-wide tunnel beneath Mark Twain Alley would connect the loading area in Transamerica III with the basement and elevator access of Transamerica II. Vehicular access to the parking and loading levels under Transamerica III would be from Sansome Street. The project would convert to retail space the existing at-grade, van-sized loading space that serves Transamerica II from Mark Twain Alley.

The project would redesign the open space and pedestrian areas on the entire block (see Figure 7). Redwood Park, comprising about 21,400 square feet of privately owned, publicly accessible open space, was completed in 1972 as part of the Transamerica Pyramid project. The project would replace the light-well on the western side of Transamerica II with an enclosed greenhouse or indoor park, comprising about 2,400 sq. ft. of new open space on the same level as Redwood Park. The project would remove 790 sq. ft. of open space from the existing Redwood Park near the Washington Street entrance to the park; this would become the western portion of the Transamerica III building site. With the completion of the project, the block would contain 23,010 sq. ft. of open space consisting of the original Redwood Park area of 21,400 sq. ft., reduced by 790 sq. ft. for the building site of Transamerica III, plus the greenhouse area of about 2,400 sq. ft. to be constructed on the west side of Transamerica II.

The project would revise the relationships between Redwood Park and the other elements of the block: the Pyramid, Transamerica II, the proposed Transamerica III, and Mark Twain Alley. With new and related paving treatments and landscaping, the project would connect Redwood Park with the surrounding buildings. The western edge of Redwood Park adjacent to the Transamerica Pyramid would include a combination artwork / water feature.

Restaurant and retail uses in Transamerica III would front on the park. The Mark Twain Alley pedestrian space would be improved with new benches, new ornamental trees and new pavers. Mark Twain Alley would be open to the public at all times; the Transamerica II indoor garden and Redwood Park would be open from 8:00 a.m. to 6:00 p.m. (Monday through Friday, and possibly on weekends). All entrances to Redwood Park would have locks or gates for nighttime security.

The project would re-landscape Redwood Park. Redwood Park contains 69 Coast Redwoods (*Sequoia sempervirens*) planted in 1972. The trees have not been thinned



SOURCE: Skidmore, Owings & Merrill and Michael Painter Associates

Transamerica III ■

Figure 7
Open Space and Landscaping Plan for the Project Block

as they have matured; as a result of crowding, 25 of the trees are considered unhealthy or unsound. The re-landscaping would include: removal of unhealthy redwood trees, temporary boxing of some healthy redwood trees currently adjacent to the site of the proposed building to allow construction of the foundation and basements, installation of new ornamental trees, and redesign of access to the park to provide direct access from Transamerica II and III. Redwood Park would be replanted with some of the boxed healthy redwoods; the boxed healthy redwood trees not replanted in Redwood Park would be donated to the San Francisco Recreation and Park Department to be planted in Golden Gate Park. The project would replace about 50 existing, predominantly eucalyptus, street trees on the block with new (probably ginkgo) street trees and plant about 50 additional street trees (also probably ginkgo). The project would provide the artwork required by *City Planning Code* Section 149 in the form of the artwork/water feature along the western edge of the park and in the design of the paving and seating in Redwood Park.

City Planning Code Section 138(b) requires that one sq. ft. of open space be provided for every 50 gsf of new office or retail space; the open space provided must meet minimum standards as defined by the Code. In addition, *City Planning Code* Section 139(d) requires a contribution of $2.00 per net new gsf of office use to the Downtown Park Fund. The project would have a total of 144,375 gsf of office and retail space. Because Transamerica I (the Pyramid) was constructed with open space, the amount in excess of that that would have been required had that building been built under current codes can be counted against the requirements of the proposed project on the same block owned by the same sponsor. The open space requirement for the Pyramid and Transamerica III would be 13,488 sq. ft. The project block would have a about 23,010 sq. ft. of open space, considerably in excess of the requirements.

D. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

PROJECT SCHEDULE AND COST

The project sponsor expects environmental review, project review and detailed design to be completed in mid-1991. If the project were approved and building permits issued, demolition and construction would take about 18 to 24 months, with initial occupancy in late 1993 or early 1994. Estimated construction cost of the project would be about $18,600,000 (1990 dollars), including demolition, excavation, building shell and interior improvements.

APPROVAL REQUIREMENTS

Following a public hearing before the City Planning Commission on the Draft EIR, responses to written and oral comments will be prepared. The EIR will be revised as appropriate and presented to the City Planning Commission for certification as to accuracy, objectivity, and completeness. No permits may be issued before the Final EIR is certified.

The Office Growth Limitation Ordinance (Ordinance No. 414-85 approved September 10, 1985 by the Board of Supervisors, signed by the Mayor September 17, 1985, and effective October 17, 1985) limited growth in the form of major office developments (over 50,000 sq. ft.) in San Francisco to a total of 2.85 million sq. ft. over a period of three years (an average of 950,000 sq. ft. per year). This includes office development citywide and encompasses development by the Redevelopment Agency, the Port of San Francisco and State and Federal agencies. In accordance with the ordinance, the project would be subject to review and approval under *City Planning Code* Section 321, Office Development: Annual Limit.

On November 6, 1986, the voters of San Francisco passed Proposition M, the Accountable Planning Initiative. It amends Section 320(g)(1) of the *City Planning Code* to lower the threshold for office projects subject to the annual limit from 50,000 sq. ft. to 25,000 sq. ft. of additional office space. Since the proposed project would add office space in excess of 25,000 sq.ft., it is subject to the provisions of Sections 320 - 325 as amended by Proposition M. Proposition M also adds Section 321.1 to the *City Planning Code*, and changes the limitation amount from 2.85 million sq. ft. of office space over three years to 950,000 sq.ft. in each one-year period. Section 321.1 requires the adjustment of the 950,000 sq. ft. annual limit by limiting new office space approvals to 475,000 sq. ft. annually until the total amount of space approved from November 29, 1984 to November 6, 1986, is reduced to zero in annual increments of 475,000 sq. ft. Up to 448,400 sq. ft. in larger office projects (50,000 sq.ft. or greater) may be approved during the approval period ending October 1991, including about 48,300 sq. ft. remaining from the 1989-1990 approval period, and about 400,000 sq. ft. available from the 1990-1991 approval period.

Proposition M also establishes eight Priority Policies. These policies are: preservation and enhancement of neighborhood-serving retail uses; protection of neighborhood character; preservation and enhancement of affordable housing; discouragement of

commuter automobiles; protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; earthquake preparedness; landmark and historic building preservation; and protection of open space. Prior to issuing a permit for any project which requires an Initial Study under CEQA or adopting any zoning ordinance or development agreement, the City is required to find that the proposed project or legislation is consistent with the Priority Policies. The Landmarks Preservation Advisory Board can choose to review any building subject to Proposition M and make a recommendation to the Zoning Administrator and the City Planning Commission on any demolition permit for a rated building. The City Planning Commission, in its decision regarding the proposed project approval or disapproval, would make a determination of the project's conformance with the Priority Policies.

Under Sections 321 and 322 of the *City Planning Code*, the project would be evaluated and compared with other proposed projects being considered in the same approval period, based on criteria set forth in Section 321(b). The criteria include, among other issues, consideration of the project's contribution to and effects on objectives and policies of the *Master Plan*; the quality of the design of the development; the anticipated uses of the development; the suitability of the project for its location; and the use of TDR by the project sponsor. The project would also require approval under Section 309 of the *City Planning Code*, Permit Review in C-3 Districts, which governs the review of project authorization and building and site permit applications in C-3 Districts. Under Section 309, the City Planning Commission would evaluate the project's provision of artwork (*City Planning Code* Section 149) and open space (*City Planning Code* Section 138).

As noted above, the project would be reviewed by the City Planning Commission in the context of applicable objectives and policies of the *San Francisco Master Plan*. Some of the key objectives and policies are noted here. Objective 2 of the *Commerce and Industry Element* encourages development to "maintain and enhance a sound and diverse economic base and fiscal structure for the City."/2/ Objective 2 of the *Downtown Plan Element* encourages development in the Downtown to "maintain and improve San Francisco's position as a prime location for financial and administrative, corporate and professional activity."

Other objectives and policies include Objective 1, Policy 7 of the *Transportation Element*, to "seek means to reduce peak travel demand;" Objective 1, Policy 6 of the *Transportation Element*, to "develop a financing system for transportation in which

funds may be allocated without unnecessary restriction for priority improvements according to established policies;" Policy 3 of Objective 18 in the *Downtown Plan* which discourages provision of new long-term commuter parking spaces in and around downtown and states that replacement of long-term parking spaces lost in the downtown should occur in areas peripheral to the downtown commercial district; Policy 2 of Objective 20 of the *Downtown Plan* which seeks to organize and control traffic circulation in the downtown core by channeling vehicles into peripheral parking facilities; and Policy 7 of Objective 20 of the *Downtown Plan* which encourages conversion of existing parking facilities to short-term use, rate structures which favor short-term parking, and states that additional short-term parking facilities should be located in the designated parking belt outside the downtown core.

The *Urban Design Element* of the *Master Plan* also contains objectives which, among other considerations, would be used to evaluate the design of the proposed project. These objectives include: Objective 1, "Emphasis of the characteristic pattern which gives to the City and its neighborhoods an image, a sense of purpose and a means of orientation"; Objective 2, "Conservation of resources which provide a sense of nature, continuity with the past, and freedom from overcrowding"; and, Objective 3, "Moderation of major new development to complement the City pattern, the resources to be conserved, and the neighborhood environment".

Urban Design objectives of the *Downtown Plan* include: Objective 1, "Create an urban form for the downtown that enhances San Francisco's stature as one of the world's most visually attractive cities"; Objective 2, "Create and maintain a comfortable pedestrian environment"; Objective 3, "To create a building form that is visually interesting and harmonizes with surrounding buildings"; and, Objective 4, "Create and maintain attractive, interesting urban streetscapes".

The project sponsor would request project authorization from the City Planning Commission pursuant to Sections 320-324 of the *City Planning Code*, whereby the project would be evaluated and compared to other proposed office projects. The City Planning Commission would hold a public hearing to consider the project application under Sections 309 and 322, including requests for exceptions under 309(e), to the ground-level wind current requirements as permitted in Section 146. Under Section 309 the City Planning Commission would also evaluate artwork (Section 149) and open space. The City Planning Commission would adopt a motion approving, approving with conditions, or disapproving the project./1/ If the project were to be

approved by the City Planning Commission, the project sponsor must obtain demolition, building, and related permits from the Central Permit Bureau of the Department of Public Works. An application for a Site Permit for the project has not been filed to date.

Under Section 309 of the *City Planning Code* the sponsor would request exception from requirements of Section 148, Reduction of Ground-Level Wind Currents in C-3 Districts, to allow exceedances of the 11 mile per hour comfort criterion for pedestrian areas. The project would result in exceedances at three locations. Under Section 148 of the *City Planning Code*, no project may be approved which causes ground-level wind speeds to exceed the hazard criterion of 26 miles per hour for more than one hour per year. The project would not result in such an exceedance.

Proposition K, the sunlight ordinance, implemented by *City Planning Code* Section 295, requires disapproval by the City Planning Commission of any permit for construction of a structure more than 40 feet in height, the shadow of which would cause adverse impacts to the use of property under the jurisdiction of the Recreation and Park Department, unless it determines, based on comments from the General Manager of the Recreation and Park Department in consultation with the Recreation and Park Commission, that the shadow would be insignificant. This project will cast a shadow on part of Maritime Plaza and would require such a determination regarding that shadow. The project would require City Planning Commission action to allow the project to be completed as designed. The currently adopted guidelines for implementing the park shadow ban do not permit approval of any project that casts any shadow on Maritime Plaza.

The proposed building includes 21,500 gsf of new parking or 15.8% of the gross floor area. Under the *City Planning Code* (Section 204.5) 7%, or 9,504 gsf of the new parking, is permitted without a conditional use permit. The amount of space proposed for parking exceeds the 7% limit by approximately 11,995 gsf. Conditional use approval would be required, therefore, for the 11,995 gsf of parking in excess of the 7% (9,504 gsf) of gross floor area permitted as an accessory use. The project would require no Transferred Development Rights (TDR).

NOTE - Project Description

/1/ The *Downtown Plan* (Section 309(h)) requires a public hearing before the City Planning Commission for all projects exceeding 50,000 sq. ft. of net new floor area.

IV. ENVIRONMENTAL SETTING

A. LAND USE

LAND USE

The project site is located at the southwest corner of the intersection of Sansome and Washington Streets on the block bounded by Montgomery, Clay, Sansome, and Washington Streets. The site is currently occupied by three buildings: the one-story 501-505 Washington Street building, the four-story 517 Washington Street brick building and the eight-story 545 Sansome Street building (see Figures 8 and 9 pp. 45 and 46). All structures on the site are built to the lot lines. Uses on the project site include a total of 79,100 gsf of office space and 4,050 gsf of retail space. Retail uses generally occupy the ground floor with office uses and storage above. Until November 1987, the 545 Sansome Street building was occupied as office space and had about 210 employees. Since then the building has been used for temporary storage. As of late 1989, employment at the site totaled about 50 persons.

Other buildings on the project block include the Transamerica Pyramid at 600 Montgomery Street and the Transamerica II office building at 505 Sansome Street. Redwood Park, approximately 21,400 square feet of privately owned, publicly accessible open space, occupies the center of the block. The entrance and exit service ramps for access to the garage under the Transamerica Pyramid are mid-block on Clay and Washington Streets.

Directly east of the site across Sansome Street, between Washington Street and Mark Twain Alley, is the two-story San Francisco Fire Department Station No. 13. Directly south of the site on the project block is Mark Twain Alley and the Transamerica II building. West of the site is the Washington Street entrance to Redwood Park and the Transamerica Pyramid. Directly north of the site is Washington Street and the seven-story Pacific Lumber Company red-brick office building at 500 Washington Street.

The project vicinity contains a variety of building types, with high-rises to the west, south, and east and older low-rise developments to the north. In the Jackson Square Historic District to the north and west and in Chinatown to the west and north, much of the early development remains and a number of older buildings have been renovated.

Buildings in the immediate vicinity of the project block range in height from two stories on Washington Street (across from the Transamerica Pyramid) to a twenty-four-story office/residential building at the southwest corner of Montgomery and Washington Streets (across from the Transamerica Pyramid). Buildings approved or under-construction in the project vicinity include the Pan Magna Plaza (Phases I and II) on the block bounded by Clay, Kearny, Jackson Streets and Columbus Avenue and the 600 California Street building at Kearny Street. The 19-story office building, 475 Sansome Street, at the southwest corner of Clay and Sansome Streets, is undergoing renovation.

In addition to Redwood Park, open spaces in the vicinity include Portsmouth Square (two block west of the site between Clay and Washington Streets), Maritime Plaza (one block east of the site between Clay and Washington Streets), Embarcadero Plaza (four blocks east between Clay and Washington Streets), Justin Herman Plaza (four blocks southeast of the site between Drumm Street and Embarcadero), and Sidney Walton Park (three blocks northeast of the site between Front and Davis Streets).

The site is in the C-3-O (Downtown Office) district and a 200-S Height and Bulk District. The basic permitted floor area ratio (FAR) is 9.0:1 and the maximum allowable FAR, including transferable development rights (TDR), is 18.0:1. The 200-S Height and Bulk District allows a maximum height for the site of 220 ft., including an optional upper tower extension of ten percent of building height. Normally, the "S" bulk controls apply to four parts of a new building: base, lower tower, upper tower and upper tower extension. No length or diagonal limitations apply to the bases of buildings. Because the project would be less than 160 feet tall, the lower tower controls are the only bulk controls that would apply. Those bulk controls restrict maximum lower tower length to 160 feet, maximum floor size to 20,000 gsf, and maximum diagonal dimension of 190 feet.

B. SHADOW AND WIND

SETTING

Shadow

The project site is currently occupied by three structures: a ten-story office building; a three- to four-story office and retail building; and a one-story retail building. These

structures cast shadows on the streets and sidewalks in the project vicinity and on existing publicly and privately owned open spaces including Maritime Plaza and Redwood Park.

Section 147 of the *City Planning Code* states that any new development in the C-3 districts should be shaped, consistent with the dictates of good design and without unduly restricting the development potential of the site in question, to reduce substantial shadow impacts on public plazas and publicly accessible spaces. Factors to be taken into account in the determination of shadow impacts include: the amount of open area shadowed, the duration of the shadow, and the importance of sunlight to the utility of the space being shadowed.

In June 1984, the voters of the City and County of San Francisco approved Proposition K, the sunlight ordinance. Section 295 of the *City Planning Code*, which implements Proposition K, requires disapproval of any project shading property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission unless the City Planning Commission, in consultation with the General Manager of the Recreation and Park Department and Recreation and Park Commission, determines that such shade would have an insignificant adverse impact on the use of such property. For Maritime Plaza, the two commissions have adopted criteria allowing no new shade during the times defined by Proposition K.

Existing and project shadow patterns for various times of the day and year are discussed in detail in Chapter IV, Impacts, pp. 63 to 70. Sunlight requirements under the *City Planning Code* for regulated spaces in the site vicinity are discussed on p. 64 under shadow impacts.

Wind

U.S. Weather Bureau data show that westerly (i.e. from the west) to northwesterly winds are the most frequent and strongest winds during all seasons in San Francisco./1/ Of the 16 primary wind directions measured at the Weather Bureau station (at a height of 132 ft.), four directions comprise the greatest frequency of occurrence as well as the majority of strong wind occurrences. These are northwest, west-northwest, west and west-southwest, with occurrence rates of about 10%, 14%, 35%, and 2%, respectively, of the time between the hours of 6 a.m. to 8 p.m. throughout the year. The remaining 12 wind directions comprise 36% frequency of annual occurrence with lower wind speeds. Calm conditions occur two percent of the time.

Average wind speeds are the highest during summer and lowest during winter months. Strongest peak winds, however, occur in the winter when speeds of 47 miles per hour (mph) have been recorded./2/ The highest average wind speeds are in the mid-afternoon and the lowest are in the early morning.

Pedestrian Comfort and Wind Criteria

Wind conditions partly determine pedestrian comfort on sidewalks and in other public areas. In downtown areas, high-rise buildings can redirect wind flows around buildings and divert winds downward to street level; each can result in increased wind speed and turbulence at street level. The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to four mph have no noticeable effect on pedestrian comfort. With speeds from four to eight mph, wind is felt on the face. Winds from 8 mph to 13 mph will disturb hair, cause clothing to flap and extend a light flag mounted on a flagpole. For wind speeds from 19 mph to 26 mph, the force of the wind will be felt on the body. With 26 mph to 34 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over./3/

In order to provide a comfortable wind environment for people in The Downtown area, Section 148 of the *City Planning Code* establishes comfort criteria based on pedestrian-level windspeeds that include the effects of turbulence, referred to as "equivalent wind speeds." Section 148 sets comfort levels of 7 mph equivalent wind speed (based on a one-minute average) for public seating areas, 11 mph equivalent wind speed (based on a one-minute average) for areas of substantial pedestrian use, and 26 mph equivalent wind speed (based on a one-hour average) as a wind hazard criterion. New buildings and additions to buildings may not cause ground level winds to exceed these levels more than ten percent of the time year round between 7:00 a.m. and 6:00 p.m. /4/ If existing wind speeds exceed the comfort level, new buildings and additions shall be designed to reduce ambient wind speeds to meet the requirements.

A building may qualify for an exception to the standards that would allow it to add to the amount of time the comfort level is exceeded by the least practical amount if: 1) it can be shown that the building or addition cannot be shaped and other wind baffling measures cannot be adopted to meet the foregoing requirements without creating an

unattractive and ungainly building form and without unduly restricting development of the building site in question, and 2) it is concluded that the addition is insubstantial because of the limited amount by which the comfort level is exceeded, the limited location in which the comfort level is exceeded, or the limited time during which the comfort level exceeded. No exception would be granted and no building or addition would be permitted that would cause wind speeds to exceed the hazard level, defined as an hourly average of 26 mph, for more than a single hour of any year. Exceptions in accordance with sections 1) and 2) above may be requested under Section 309 of the *City Planning Code*.

Existing and project generated wind conditions are discussed in Chapter V, Environmental Impact, pp. 70 to 75 and Appendix B, pp. A.31 to A.37.

NOTES - Shadow and Wind

/1/ The U.S. Weather Bureau data used in this analysis were gathered at the weather station atop the Old Federal Building at 50 United Nations Plaza during the years 1945-1950. Data were taken hourly, annually for 16 wind directions. The data base, comprised of 32,795 hourly observations, is of sufficient length to provide a reliable estimate of future climatic conditions in San Francisco.

/2/ E. Jan Null, *Climate of San Francisco*, NOAA Technical Memorandum, NWS WR-126, February 1978.

/3/ Lawson, T.V. and A.D. Penwarden, "The Effects of Wind on People in the Vicinity of Buildings," Proceedings of the Fourth International Conference on Wind Effects on Buildings and Structures, London, 1975, Cambridge University Press, Cambridge, U.K., 605-622 1976.

/4/ Section 148 of the City Planning Code specifies the hours of 7:00 a.m. to 6:00 p.m. The available weather data cover the hours of 6:00 a.m. to 8:00 p.m. Thus, observation from two additional evening hours and one additional morning hour are included in these data. Because winds are generally stronger in the afternoon and evening than in the morning, this approximation is conservative -- it is likely to overestimate the existing and projected wind speeds.

C. CULTURAL RESOURCES /1/

There is no recorded occupation or use of the project site during the Prehistoric, Spanish / Mexican, or Early American periods. The earliest recorded history at this site dates from the Gold Rush era when the Washington Street Wharf was built out about 275 feet into the bay from the original shoreline. Archival evidence indicates that two iron structures were built alongside a pier connecting the Washington Street Wharf with the Clay Street Wharf at the line of present day Sansome Street. These structures were consumed in the Great Fire of May 3-4, 1851. The "map of the burnt district"

which depicts the structures indicates that the building at the southwest corner of Washington and Sansome Streets contained Baldwin's Bank; two doors south Beach, Stedden & Co., and the Evening Picayune occupied another building. A reference to an early private San Francisco mint operating under the name "Baldwin & Co." suggests the possibility that "Baldwin's Bank" and "Baldwin & Co." were the same business.

The Niantic, a beached storeship, was located near the project site, at the northwest corner of Clay and Sansome Streets, and it is possible that remnants of the ship or its contents may have been discarded within the Transamerica III building site or Redwood Park. Niantic remains were unearthed during excavation for construction of Transamerica II, and scattered marine artifacts from the Niantic may also lie buried under the project site.

Landfill within the project vicinity began after the Great Fire of May 3-4, 1851 and was completed by the end of that year. Once it had been filled, the project vicinity became home to a variety of structures, primarily two-story and brick buildings, containing retail and wholesale outlets. Following the Gold Rush, the project vicinity continued as a retail and wholesale merchandising area. After the Earthquake and Fire of 1906, the project vicinity was an area of small manufacturing enterprises and offices.

NOTE - Cultural Resources

/1/ Archeo-Tec, Consulting Archaeologists, *Archival Cultural Resources Evaluation of the Transamerica III Project, San Francisco, California, January 1990.* This report is on file and available for public review at the Department of City Planning, 6th Floor, 450 McAllister Street, San Francisco.

D. URBAN DESIGN AND SITE VISIBILITY

URBAN DESIGN

The project site contains three structures: 501-505 Washington Street, 517 Washington Street and 545 Sansome Street. The one-story, 501-505 Washington Street retail building was built in 1975. 517 Washington Street is a three-to-four-story, brick commercial building constructed in 1910. 545 Sansome Street is an eight-story

reinforced concrete building, constructed in 1930, that was once used as a printing and publishing building. Nearby high-rise buildings on the project block include the 48-story, 893-foot-tall Transamerica Pyramid (the tallest building in San Francisco) and the 19-story, 247-foot-tall Transamerica II. Also on the project block is an entry ramp (on Washington Street) and an exit ramp (on Clay Street) for the Transamerica Pyramid's underground garage. Arcades of the Transamerica Pyramid provide covered pedestrian walkways around that building, with the exception of the attached restaurant at its eastern border abutting Redwood Park.

Loading facilities and a service bay for Transamerica II are located above-ground on Mark Twain Alley. Access to Mark Twain Alley is via Sansome Street. Retail uses along Mark Twain Alley adjacent to Transamerica II include a cafe and an attached restaurant bordering Redwood Park. The western ground floor portion of Transamerica II contains a light well and a small basement courtyard providing access to lower level office space from Clay Street.

Redwood Park is a privately-owned, publicly accessible open space on the project block comprising approximately 21,400 square feet. It extends from Clay Street to Washington Street along the east side of the Transamerica Pyramid. Gates from Mark Twain Alley, Washington Street, and Clay Street provide entry to the park. From within Redwood Park there is no direct access to buildings on the project block; an iron fence and redwood trees flank the edges of the park. The park contains clusters of redwood trees along its eastern boundary and in its northwest and southwest corners. These redwood trees stand approximately 40 to 50 ft. in height and are planted on raised grass berms.

The park includes flower planters and redwood benches. On the northwest quadrant of the park is an in-ground water feature that is currently covered over. Paving in the park is mixed: grey rectangular conglomerate pavers inside the park fences, square conglomerate inside Mark Twain Alley, and patterned, dual-color paving along the light well.

The facade material of the Transamerica Pyramid is precast concrete. The facade material of Transamerica II is glass-fiber reinforced concrete (GFRC). Transamerica II has balconies at each window with nautical-style railings. Materials used on the surface are adobe-colored with a matte finish. With the exception of the

Transamerica Pyramid, buildings on the block are built to lot lines and have a continuous streetwall frontage that conforms to the grid pattern of the Financial District.

The project area is a mix of older buildings (dating from pre-1906 to the 1930s) and newer development (beginning in the 1950s). Older low-rise buildings tend to be of brick and concrete, often with terra cotta ornamentation, recessed windows, and distinct compositional elements; thus, they generally contain more surface ornamentation than the more recently completed high-rise buildings. Older buildings in the area north of Washington Street are generally three to five-stories in height and tend to be built to lot lines. Montgomery and Clay Street buildings, however, are typically taller with less architectural detailing.

The Jackson Square Historic District, located north of the project site, contains buildings dating from the 1850s and 1860s that are the only surviving examples of San Francisco's pre-1906 central business district. Jackson Square's low-rise buildings typically house retail uses on their ground floors with office uses on upper floors. The Financial District, which continues to the south and east of the project block, consists predominantly of high-rise office buildings, many of which are related to banking, finance, or commerce, intermixed with smaller buildings.

Newer development in the project area tends to be constructed of concrete, steel, and glass. Windows are generally flush in relation to the facade. Building bases are minimally defined and building forms tend to be unembellished rectangles and generally contain less architectural detail than the older office buildings and banks. This is particularly true of buildings dating from the 1950s through the mid-1970s. Newer high-rises completed in the 1980s show a greater variety of form, including the Montgomery-Washington Tower (an office building with condominiums on the upper floors), the Bank of Canton of California, and 505 Montgomery Street.

SITE VISIBILITY

The project block is located near the Columbus Street and Washington Street corridors. The area connects visually with North Beach to the northwest, Chinatown to the west, and the Embarcadero and the waterfront to the east (see Figures 8 and 9 for views of the project site). At the intersection of Sansome and Clay Streets, the southerly view extends through the Financial District to Market Street. From the intersection of Montgomery and Clay Streets the view runs north to Telegraph Hill.

SOURCE: Gerald Ratto Photography

Figure 8
View of the Site
West on Washington Street
East of Sansome Street

SOURCE: Gerald Ratto Photography

Figure 9
View of the Site South
Across Washington Street
East of Mongomery Street

In the project block there are no street-level view corridors to the Bay itself. The view along Washington and Clay Streets eastward toward the Bay is terminated by trees in the Embarcadero Plaza and freeway ramps. Beyond those structures is a partial view of the towers of the Bay Bridge. Views from the project block within Redwood Park include low-rise older buildings to the north and newer, larger structures to the east, west, and south.

The Transamerica Pyramid, at 48 stories and 893 feet, is the tallest building in the City. Its pyramidal shape is visible from various hills, view corridors, and structures throughout the City of San Francisco, the East Bay, and Marin County. Other buildings on the project block are visible only from points within the immediate vicinity. Buildings on the site are not generally visible from other locations more distant than one block from the site, because of intervening buildings.

E. BIOLOGY

The site of the proposed Transamerica III building is currently covered by impervious surfaces and does not contain plant or animal habitats.

Redwood Park includes 69 Coast Redwoods planted in 1972. The trees, although found in areas between Big Sur and Oregon along the Pacific coast, are not native to most of San Francisco, including the project site which was submerged under San Francisco Bay until the 1850's. Twenty-five of these redwoods are considered unhealthy or structurally unsound./1/ See Figure 18, p. 7- for the location and proposed disposition of the redwood trees.

NOTE - Biology

/1/ Barrie D. Coate and Associates, *An Analysis of the Redwood Trees at Transamerica Park*, San Francisco, California, January 15, 1990.

F. TRANSPORTATION

Freeway access to the East Bay via the Bay Bridge is provided by ramps at First and Harrison Streets (about three-quarters of a mile southeast of the site) and at Washington and Clay Streets (about one-quarter of a mile east of the site). Freeway access to the

Peninsula and the San Francisco International Airport is provided by ramps at Washington and Clay Streets and Harrison and Fourth Streets. The Clay and Washington ramps are closed as a result of the Loma Prieta earthquake (see further discussion below). Traffic headed to the North Bay generally travels west to Van Ness Avenue or Franklin Street and then north to Lombard Street leading to the Golden Gate Bridge, or uses The Embarcadero to Bay Street connecting to the Golden Gate Bridge via Marina Boulevard.

In October 1989, an earthquake of Richter magnitude 7.1, the Loma Prieta earthquake, occurred. It had notable effects on the regional highway system. One span of the upper deck of the Bay Bridge collapsed, closing the bridge for one month for repairs. The double-decked Cypress structure on I-880 near downtown Oakland collapsed and has since been demolished. Traffic bound to the Bay Bridge from I-880 south of I-580 no longer has direct access to the bridge and is now redirected through I-580.

Within San Francisco, major damage to State Route 480 (Embarcadero Freeway), the I-280 extension north of the U.S. 101 interchange and the U.S. 101 ramps between Fell and Turk Streets caused closure of these routes including the Clay and Washington ramps. The section of I-280 between Army Street and the Sixth Street ramps was repaired and reopened within a few months of the earthquake; however, the other facilities remain closed. Repair of the damaged section of I-280 is expected to begin in May 1991 and be completed in early 1992. Caltrans plans to retrofit the existing structure./1/

In April 1990, Mayor Agnos proposed that the City demolish the elevated freeway and replace it with a depressed roadway within the same right-of-way. The feasibility of implementing this project and sources of funding for it are being studied by the City staff at the Mayor's direction and would be subject to separate environmental review. Alternatively, Caltrans has proposed repair of the Embarcadero Freeway; however, the latest cost analysis concludes that the repair work would cost almost as much as construction of a new roadway as proposed by the Mayor./2/ A decision on whether to retrofit or replace the double-decked section of The Embarcadero Freeway between Beale and the end of the Bay Bridge, known as the terminal separation structure, is still pending.

Caltrans District 4 is proceeding with plans to remove the upper deck of the U.S. 101 elevated structure between Fell Street and Turk Street (the Golden Gate / Franklin

Street and the Turk / Gough Street ramps). Demolition and reconstruction work is estimated to be completed by July 1991./1/ The broad lower deck of the freeway, which previously carried only two lanes of traffic would, upon completion of the project, carry two-way traffic in a total of four lanes. This would be accomplished with some ramp reconfiguration, but without widening the existing structure. Capacity of the facility would be comparable to facility capacity before the earthquake.

When (and if) transportation facilities will be restored to pre-1989 quake levels is unknown at this time.

The Transamerica block is bounded by Montgomery Street on the west, Clay Street on the south, Sansome Street on the east, and Washington Street on the north. The project site is in the northeast quadrant of the project block, adjacent to the Washington Street / Sansome Street intersection. Local access to the site is provided by Washington, Montgomery, Clay and Sansome Streets. The street network surrounding the project site is part of the one-way grid system that provides circulation throughout downtown San Francisco.

Washington Street is a three-lane street with parking on both sides of the street. Washington Street runs one-way westbound, north of the project site. Montgomery Street is a three-lane roadway which runs one-way southbound, west of the project site. On Montgomery Street, parking is allowed on the west side except during the p.m. peak period, when four lanes are used for traffic. Clay Street is a three-lane street with parking allowed on the northern side. Clay Street is one-way eastbound, south of the project site.

Sansome Street is a one-way street northbound, and is a two lane roadway during non-peak times with parking on both sides of the street. During the p.m. peak period (4:00 p.m. to 6:00 p.m.), parking is prohibited and four lanes are devoted to traffic. The existing site provides no parking for long- or short-term users. A survey of the existing off-street public parking in the site vicinity indicates that a total of about 5,500 parking stalls exist within a ¼-mile radius of the project site which are about 80% occupied on a typical weekday. The daily parking rate for these lots varies from $12.25 to $18.00./3/

The Downtown section of the *San Francisco Master Plan* includes a Transportation Master Plan which identifies existing streets as Transit Preferential Streets, Primary

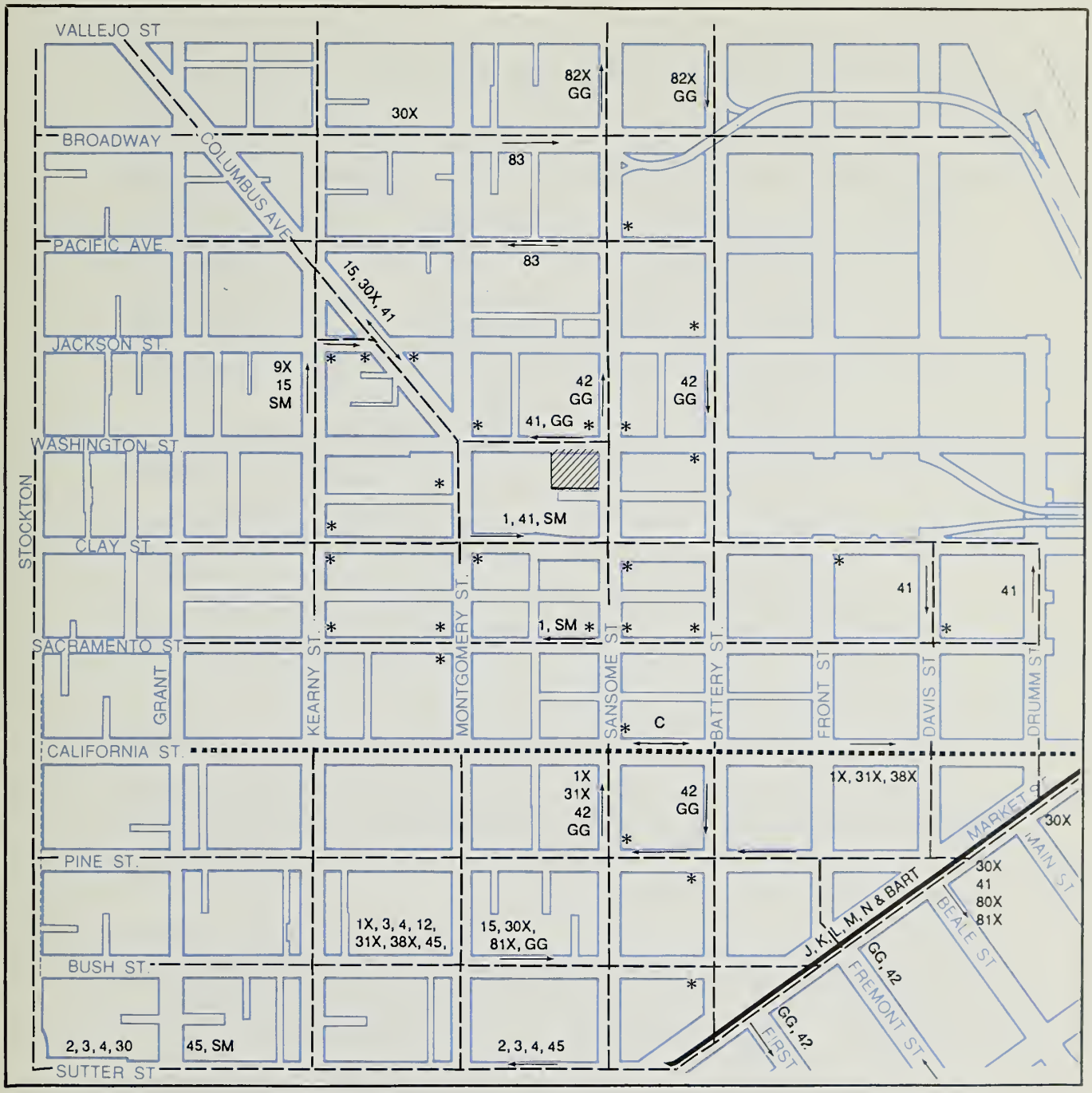
Vehicular Streets, or Commuter Bike Streets./4/ In the vicinity of the project, Transit Preferential Streets are California, Sacramento, Clay, Kearny, Montgomery, Sansome, and Battery Streets and Columbus Avenue. Primary Vehicular Streets are Washington, Clay, Montgomery, and Kearny Streets. Proposed Commute Bike Streets are Columbus Avenue, and Kearny and Montgomery Streets.

The project site is readily accessible via local and regional transit service. The San Francisco Municipal Railway (Muni) provides service to the area with both electric trolley coaches and motor coaches. In the vicinity of the project site, Kearny Street between Columbus Avenue and Sacramento Street, Columbus Avenue, Montgomery Street between Washington Street and Clay Street, Sansome Street, Battery Street, Clay Street, Sacramento Street, and California Street are designated as Transit Preferential Streets by the Transportation Element of the Master Plan. Priority is given to transit vehicles over autos during commute and business hours on weekdays along these streets.

Immediately adjacent to the site are four Muni lines (see Figure 10). Muni Route 1 operates service between the Embarcadero Center and the Richmond District along Clay, Sacramento, and California Streets. Muni Route 15 provides service between southeast San Francisco and Fisherman's Wharf via the Montgomery Street BART station. Muni Route 41 provides weekday rush-hour service from the Embarcadero Center to the east side of the Presidio along Sansome, Clay, and Washington Streets, and Muni Route 42 provides service on Battery and Sansome Streets.

Table 2 (p. 52) shows the current load factors (ratios of passengers to seats) for Muni Routes 15, 41, and 42 during the morning and evening peak periods. These data represent transit loading at access points near the project site. As shown, the load factor for all three lines ranges from 0.46 to 1.31 during the morning peak hour, and from 0.46 to 0.89 during the evening peak hour. The load factor which is most critical is that for Route 42, where the number of outbound passengers at the Sansome Street / Washington Street access point exceeds the seated capacity by 31% (load factor 1.31) during the p.m. peak hour. Overall, seats exist at this point on all routes during both peak hours.

In addition to the local routes, the express 30X operates in the peak hour and peak direction along Sansome and Montgomery Streets between the foot of Howard Street and the east side of the Presidio. Route 42 community service operates in opposing



Project Site

BART Route and Muni Metro Route

Surface Transit Route

Cable Car Route

* Bus Stop Near Project Block

1X, 31X, J, K — Route Designation and Direction 1X, 9X, 31X, and 38, Muni Routes Include 1AX, 1BX, 9AX, 9BX, 31AX, 31BX, 38AX, and 38BX Routes.

GG — Golden Gate Transit Route

SM — Samtrans Route

SOURCE: MUNI San Francisco Street and Transit Map, 1990

Transamerica III ■

Figure 10
Transit Routes in the Project Vicinity

TABLE 2: MUNI LOAD FACTORS - EXISTING DEMAND

Route	Direction	Location	Time	Vehicle Type	Capacity	Average Load	Load Factor
15	Inbound	Kearny/Clay	7-9 a.m.	Articulated	57	42.6	0.78
			4-6 p.m.	Articulated	57	39.1	0.69
	Outbound	Montgomery/ Commercial	7-9 a.m.	Articulated	57	49.0	0.86
			4-6 p.m.	Articulated	57	26.5	0.46
41	Inbound	Columbus/ Montgomery	7-9 a.m.	Trolley Coach	50	53.0	1.06
	Outbound	Washington/ Sansome	4-6 p.m.	Trolley Coach	50	41.4	0.83
42	Inbound	Battery/ Washington	7-9 a.m.	40-seat Flyers	40	18.4	0.46
			4-6 p.m.	40-seat Flyers	40	35.4	0.89
	Outbound	Sansome/ Washington	7-9 a.m.	40-seat Flyers	40	52.3	1.31
			4-6 p.m.	40-seat Flyers	40	24.0	0.60

SOURCE: Korve Engineering, Inc.

loop movements along Sansome and Battery Streets south as far as Townsend Street, west to Van Ness Avenue, and north to North Point Street. Table 3, p. 53, lists the Muni service surrounding the project site.

Golden Gate Transit operates 19 routes between the North Bay and the Financial District, with stops adjacent to the project along Montgomery Street and Sansome Street. Golden Gate Transit provides peak-hour service to Marin and Sonoma Counties. In addition to the 19 routes that pass the project site, connections to other routes can be made at the Transbay Transit Terminal (at Howard and First Streets), and at 7th and Market Streets. Golden Gate Transit also operates ferry service from the Ferry building to Larkspur and Sausalito. The Ferry building is six blocks east of the site.

Market Street is five blocks south of the site, where transit connections can be made to most regional routes. Regional service to the East Bay is provided by BART at either the Montgomery Street station or the Embarcadero station, and by AC Transit from the Transbay Transit Terminal, about six blocks southeast of the site.

TABLE 3: EXISTING TRANSIT SERVICE - MUNI ROUTES

Service	Adjacent	Distance from Project Site 1/4 Mile	1/3 Mile	1/2 Mile
Downtown Trunklines	1, 15, 41		2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 21, 30, 31, 38, 38L, 66, 71, 76	26
Express	30X	9X, 9AX/BX, 80X, 81X, 82X	1AX/BX, 31 AX/BX 38AX/BX, 82X	14X
Community	42	83		32,39
Cable Car		C		PH, PM
Metro			J, K, L, M, N	

SOURCE: Muni Route Map.

Regional service to the Peninsula is available by CalTrain from the train terminal at Fourth and Townsend Streets about 1.6 miles south of the site, and by SamTrans from the Transbay Transit Terminal, and peak-hour routes in the Financial District and by BART on the Daly City line.

The RIDES carpool program, operating as a nonprofit publicly funded corporation, provides consulting and matching services to help establish Bay Area carpools and vanpools.

The sidewalks surrounding the project block have varying effective widths. The sidewalk effective width is calculated by subtracting the width of any obstructions (trees, transit benches, newsstands, etc.) from the curb-to-building total width. AlongMontgomery Street at the main entrance to the Pyramid the effective width is 9.75 feet. Along Clay Street at the entrance to Redwood Park and along Sansome Street at Mark Twain Alley, the effective width is 9.2 feet. The sidewalk is narrowest along Washington Street at the entrance to Redwood Park, with an effective width of 7.75 feet. The crosswalks to and from the project block also vary in width. At the Washington Street / Montgomery Street intersection, the crosswalks are eight to nine feet wide. At the Washington Street / Sansome Street intersection, the crosswalk

across Washington Street is nearly 10-feet wide and the crosswalk across Sansome Street is 6.75-feet wide. At Sansome Street / Clay Street, nearly 8.5 feet of effective width is available to cross Sansome Street and over 10 feet to cross Clay Street. At Clay Street / Montgomery Street, both crosswalks are over nine-feet wide. The sidewalk and crosswalk effective widths are illustrated in Tables D-2 and D-3, respectively, in the technical appendix.

The sidewalks and crosswalks adjacent to the project block currently operate in unimpeded conditions during the noon peak-15-minute period and open-to-unimpeded conditions during the p.m. peak-15-minute period. In the vicinity of the project, the noon peak-15-minute period flow rates range from 0.8 to 1.5 pedestrians/foot/minute. During the p.m. peak-15-minute period, the flow rates range from 0.3 to 1.5 pedestrians/foot/minute./5/ See Appendix D, Table D-4 p. A.53, for an explanation of pedestrian flow rates and levels of service. Figure D-2, pp. A.54-A.55, shows photographs of sidewalk conditions for each flow regime.

The project site is in the northern portion of San Francisco's Financial District (see Figure 1, p. 21). The project is within the Downtown parking belt designated in the Downtown Transportation Plan of the Transportation Element of the San Francisco Master Plan./6/ A Plan goal is to reduce the number of private commuter vehicles and excess automobile traffic in the downtown core; the Plan discourages the addition of new long-term parking spaces in and around downtown.

NOTES - Transportation

/1/ Boyle, Greg, Public Information Officer, California Department of Transportations telephone conversation, December 5, 1990.

/2/ Weaver, Dick, Caltrans Deputy Director of Transportation Engineering, letter to Lyle P. Renz, Acting Division Administrator, Federal Highway Administration, dated January 9, 1991.

/3/ Based on an off-street parking inventory and use survey conducted by Environmental Science Associates on Thursday, December 13, 1990 from 11:00 a.m. to 1:00 p.m.

/4/ San Francisco Department of City Planning. January 1983, *Transportation, An Element of the Master Plan.*

/5/ Based on counts and observations at the project site conducted by Korve Engineering, Inc. on January 17, 18 and 23, 1990, during the noon (11:30 a.m. to 1:30 p.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak periods.

/6/ San Francisco Department of City Planning, January 1983, *Downtown Plan, An Area Plan of the Master Plan.*

G. CUMULATIVE AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network which measures the ambient concentrations of six air pollutants: ozone (O_3), carbon monoxide (CO), particulates (both fine particulate matter [PM_{10}] and total suspended particulates [TSP]), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco, currently is designated a non-attainment area with respect to the federal ozone and CO standards. In addition, San Francisco occasionally experiences violations of state eight-hour CO and PM_{10} standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site (about 2.1 miles south at 10 Arkansas Street and previously at 900 23rd Street) is shown in Appendix E, p. A.62-A.63 together with the corresponding federal and/or state ambient air quality standards. In 1988, there was one violation of the federal and state eight-hour CO standard and five violations of the state average 24-hour PM_{10} standard in San Francisco. In 1987, there was one violation of the federal and state eight-hour average CO standard and four violations of the state PM_{10} standards. In 1986, there were two violations of the federal and state eight-hour average CO standard and five violations of the previous state average 24-hour TSP standard./1/

BAAQMD has conducted several CO "hotspot" monitoring programs in the Bay Area, including two in San Francisco. One CO monitoring program was conducted during the winter of 1979-80 at the intersection of Washington and Battery Streets about 0.5 miles northwest of the site./2/ The high eight-hour average concentration was 10.1 ppm, which violated the 9-ppm state and federal standards by 1.1 ppm. The high one-hour average concentration of 15 ppm did not violate the 20-ppm state standard or the 35-ppm federal standard. Another CO monitoring program was conducted during the winter of 1980-81 at the intersection of Geary Boulevard and Taylor Street, about 0.6 miles west of the site, and 100 Harrison Street at Spear, about 0.8 miles southeast of the site./3/ At Geary and Taylor the observed high eight-hour average concentration was 11.5 ppm, which violated the standards by 2.5 ppm, and the high one-hour concentration was 15 ppm, which did not violate the standards. At Harrison Street the observed high eight-hour and one-hour average concentrations were 7.8 ppm and 13 ppm, respectively, which did not violate the standards. In December 1985, the City monitored CO and counted traffic at the Sixth and Brannan intersection. Data from the various "hot spot" monitoring programs indicate that locations in San Francisco near

streets with high traffic volumes and congested flows may experience violations of the eight-hour CO standard under adverse meteorological conditions.

Comparison of these data with those from other BAAQMD monitoring stations indicates that San Francisco's air quality is among the least degraded of all the developed portions of the Bay Area. Three of the four prevailing winds, west, northwest, and west-northwest, blowing off the Pacific Ocean, reduce the potential for San Francisco to receive pollutants from elsewhere in the region.

Data from monitoring within San Francisco show there have been occasional local exceedences of state and federal CO and state (but not federal) fine particulate standards, due largely to pollutant emissions from within the City. CO is a non-reactive pollutant and its major source is motor vehicles. CO concentrations are generally highest during periods of peak traffic congestion. Particulate levels are relatively low near the coast, increase with distance inland, and peak in dry, sheltered valleys. The primary sources of particulates in San Francisco are demolition and construction activities, and motor vehicle travel over paved roads.

San Francisco, like all other sub regions in the Bay Area, contributes to regional air quality problems, primarily ozone, a regional problem, in other parts of the Bay Area. Ozone is not emitted directly from sources, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving hydrocarbon (HC) and nitrogen oxide (NO_X) emissions, which are carried downwind as the photochemical reaction occurs. Ozone standards are violated most often in the Santa Clara, Livermore, and Diablo Valleys, because local topography and meteorological conditions favor the buildup of ozone and its precursors there.

In 1983, emissions from motor vehicles were the source of 87% of the CO, 39% of the HC, 62% of the TSP, 9% of the SO_X and 54% of the NO_X emitted in San Francisco./4/ These percentages are expected to apply reasonably well to current conditions.

In response to the Bay Area's ozone and CO non-attainment designations, the Association of Bay Area Governments (ABAG), BAAQMD, and the Metropolitan Transportation Commission (MTC) prepared and adopted the *1982 Bay Area Air Quality Plan (1982 Plan)*./5/ The *1982 Plan* established schedules and strategies to comply with federal ozone and carbon monoxide standards established under the Clean

Air Act by December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and carbon monoxide (standards are occasionally violated). The Clean Air Act Amendments of 1990 require that within two or three years of enactment (November 15, 1990) the State submit to the Environmental Protection Agency (EPA) a revised State Implementation Plan.

Effective January 1, 1989, the California Clean Air Act provides for the designation of districts by pollutant into three classes: moderate (defined as a district that the California Air Resources Board (ARB) determines can attain the state air quality standards by December 31, 1994), serious (a district that the ARB determines cannot attain the state air quality standards until after December 31, 1994 but by no later than December 31, 1997), and severe (a district that the ARB determines cannot attain the state air quality standards until after December 31, 1997 or is unable to specify an attainment date). In each case, the Act specifies strategies that must be adopted. In all cases, plans are required to demonstrate a five percent reduction per year in district-wide emissions for each non-attainment pollutant or its precursors unless the ARB determines that the alternative emission reduction strategy is equal to or more effective than district-wide emission reductions in improving air quality or that despite inclusion of every feasible measure and an expeditious adoption schedule, the district is unable to achieve a five percent reduction per year. The ARB and the BAAQMD are in the process of determining into which classification the BAAQMD falls. The BAAQMD expects to have a draft determination of the district's classification in February 1991 and a final determination by June 1991./6/

NOTES - Air Quality

/1/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter (PM_{10}) which has been demonstrated to have health implications when inhaled. The previous state and federal particulate standards were 100 micrograms per cubic meter (ug/m^3) and 260 ug/m^3 of particulates, respectively. The present state and federal PM_{10} standards are 50 ug/m^3 and 150 ug/m^3, respectively, of fine particulate matter. Although both the previous and present particulate standards are measured in ug/m^3, under the PM_{10} standards only those particulates 10 microns or less in size are measured. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50% to 60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM_{10} standards. BAAQMD is currently monitoring PM_{10} at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco.

/2/ Association of Bay Area Governments, AQMP Tech Memo 33, "Summary of 1979/80 Hotspot Monitoring Program," Berkeley, California, June 1980.

/3/ Association of Bay Area Governments, AQMP Tech Memo 40, "Results of the 1980/81 Hotspot Monitoring Program for Carbon Monoxide," Berkeley, California, January 1982.

/4/ Bay Area Air Quality Management District (BAAQMD), "Base Year 1983 Emissions Inventory, Summary Report," San Francisco, California, August 1987.

/5/ Association of Bay Area Governments (ABAG), BAAQMD, and MTC, 1982 Bay Area Air Quality Plan, Berkeley, California, December 1982.

/6/ Patrick Navis, California Air Resources Board Liaison to the Bay Area Air Quality Management District, California Air Resources Board, telephone conversation, January 8, 1991.

H. SEISMICITY

The Downtown Plan EIR includes information on Seismic Safety issues in the C-3 District of downtown. That information remains current. The *South of Market Plan EIR* provides similar information for that area, as does the *Mission Bay EIR* for its project area. These EIRs provide no new data about seismic issues that establish a need for revisions in the Downtown Plan EIR information or conclusions.

In summary, the Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas fault (about 9 miles southwest of Downtown) and the Hayward and Calaveras faults (about 15 and 30 miles east of Downtown, respectively). Relatively more in land in the Downtown & Vicinity is subject to violent groundshaking intensity than in the rest of the City because the eastern edge of the area, including nearly all of the project site, is built on filled land. Employment growth, such as that expected for the proposed new building, would result in larger numbers of people being exposed in the future to earthquake hazards if a major earthquake occurred during the day. New buildings are subject to more stringent building and structural standards than are older buildings. However, glass, and in some cases, building cladding, is expected to endanger those on the streets and sidewalks. The bridges leading to/from San Francisco are expected to be closed for over three days due to damaged access ramps. The same would be true of the freeways heading south to the Peninsula. Muni and Caltrain would be out of service for some time, and power outages would occur for at least one or two days. (See Downtown Plan EIR pp. IV.K.1-17a; *Mission Bay EIR*, Vol. II, pp. VI.K.11-15 and 33-43; *South of Market EIR*, pp. 154-174).

An earthquake with an estimated magnitude of 7.1 on the Richter Scale occurred in the Bay Area on October 17, 1989. The earthquake lasted about 15 seconds and caused damage in the epicentral region in Santa Cruz, Watsonville, Hollister and Los Gatos. San Francisco and other areas, as far as 50 miles from the epicenter, were also damaged.

Casualties and damage were caused by falling objects, collapsed structures, fire and miscellaneous injuries (such as heart attacks). The Cypress structure has since been demolished. Other structural damage was incurred on The Embarcadero Freeway and portion of I-280 and U.S. 101. Most of the casualties and damage were a result of ground shaking which caused some freeway structures to collapse and masonry structures (including brick chimneys) to fail. Wood-frame buildings were jolted off their foundations in areas near the epicenter as well as in San Francisco and other Bay Area cities. San Francisco's double-decked freeway structures were damaged but did not collapse.

Ground failure also occurred, most notably in the Santa Cruz areas near the epicenter. Landslides resulted in road closures and damage to structures. Liquefaction and ground settlement occurred in places further from the epicenter (for example in the Marina District and the South of Market Street area in San Francisco, and the Oakland International Airport. Fires resulted from ruptured utility lines. The type of damage caused by the earthquake was typical of moderate sized earthquakes. Damage that occurred at distances up to 50 miles from the epicenter is evidence that the project area may be adversely affected by earthquakes occurring on any of the region's major faults.

An earthquake of similar magnitude to (or larger than) the 1989 earthquake could occur on the San Andreas, Hayward, Calaveras and Greenville faults. Greater damage than that which occurred in the 1989 earthquake is predicted in the *Mission Bay EIR*, which analyzes seismic impacts for an 8.4 magnitude earthquake on the Richter scale on the San Andreas Fault, a 6.9 magnitude on the Hayward Fault, a 7.3 magnitude on the Calaveras Fault, and a 7.1 magnitude on the San Gregorio Fault. Other active faults in the region could produce smaller earthquakes.

The project site is at three ft. San Francisco City Datum (SFD). The site is filled with about 20 ft. of loose to compact fine sand fill containing scattered construction debris. Beneath the fill is a 15 to 20 ft. layer of soft silty clay known as "Bay Mud." Beneath the soft clay Bay Mud is a layer of dense clay sand about 50 to 60 feet thick with an intermediate clay layer./1/ This dense clay layer, known as the Posey formation or "bearing sands", has provided support for many structures built on piles or mats in downtown San Francisco. Interbedded layers of clay and sandy soil exist below this formation. Bedrock occurs probably between 110 to 150 feet below the ground

surface. Bay Mud is a low quality foundation supporting soil. To avoid building settlement and similar problems encountered when building on Bay Mud, a driven pile foundation, supported in the "bearing sands" (the 55 ft. thick layer of sandy, dense to very dense soils that underlay the Bay Mud layer) would be required. See pp. --to-- for a discussion of construction noise and vibration impacts.

NOTES - Seismicity

/1/ Harding Lawson Associates, "Preliminary Soil Investigation, Transamerica III Washington and Sansome Streets, San Francisco, California" February 6, 1990

V. ENVIRONMENTAL IMPACTS

An Initial Study of the proposed project was published on October 4, 1990 and it was determined that an Environmental Impact Report would be required for the project. Issues determined to require no further discussion as a result of the Initial Study include: land use and zoning, glare, population and housing, operational noise, operational air quality, endangered species, utilities and public services, geology / topography, water, hazards, architectural resources and energy. This EIR, therefore, does not discuss these issues. (See Appendix A, pages A.1 to A.30 for the Initial Study)

Not all of the impacts presented in this section are physical environmental effects as defined by the California Environmental Quality Act (CEQA). Non-physical effects are included here for informational purposes only.

A. LAND USE

CUMULATIVE CONTEXT

The impacts generated by the project would contribute to cumulative impacts that have been analyzed for the year 2000 in three Program EIRs published by the Department of City Planning. They are the *Mission Bay EIR* (Final EIR certified August 23, 1990, Case No. 86.505E), the *South of Market EIR* (Final EIR certified December 7, 1989, Case No. 85.463EZM), and the *Downtown Plan EIR* (Final EIR certified October 18, 1984, Case No. EE81.3)./1/ The *Mission Bay* and *South of Market Final EIRs* present the most current, consistently derived forecasts of employment, divided into different business activities and building space for the C-3 (Downtown) Districts, within which the project is located. In addition, both provide forecasts for the South of Market Plan area. The *Mission Bay Final EIR* also presents distinct forecasts for areas other than the C-3 Districts and South of Market area, which together define the "Downtown & Vicinity": the Northeast Waterfront, Civic Center / South Van Ness, and Mission Bay areas.

The Mission Bay and *South of Market EIRs* also incorporate assumptions of growth and / or change in employment and building space for the rest of San Francisco and the

Bay Area region. Those citywide and regional forecasts are more general than those produced for the areas within the Downtown & Vicinity, but are sufficiently detailed for purposes of providing the proper context for analyzing cumulative environmental impacts.

The *Downtown Plan EIR* contains other cumulative information regarding such topics as energy consumption, community services and seismic effects that remains current and valid, and is applicable to the Transamerica III project.

Where information from these three program EIRs is presented in the Transamerica III EIR, it will be incorporated by reference with a summary, pursuant to CEQA Sections 21061 and 21100 (see also State CEQA Guidelines Section 15150). Those reference documents are available for public review at the San Francisco Department of City Planning, 450 McAllister Street, San Francisco.

The forecasts in the *Mission Bay* and *South of Market Plan EIRs* account for a decline rather than anticipated growth in employment in the C-3 District and elsewhere in the Downtown & Vicinity during the early 1980's, provide forecasts of space associated with employment growth in the future, and take into account specific buildings approved or under construction that would accommodate a portion of the employment increase forecast. The forecasts go beyond the timeframe during which the known and proposed space would be built and absorbed./1/

In summary, the forecasts show about 94,000,000 to 95,000,000 sq. ft. of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,500,000-25,900,000 sq. ft. over the amount existing in 1985 (the setting year). The forecast accounts for demolition and new construction, and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million sq. ft. of office space vacant in 1985 and another several million approved or under construction as of 1985. A five percent vacancy rate is assumed in 2000. A relatively small amount of the total space would be proposed and approved between 1986 and 1997 (to be built and absorbed by 2000). (See *Mission Bay EIR*, Vol. Three, pp. XIV.B.37-41.) About 75% of the office space would be in the C-3 District in 2000. The proposed project would contribute about one-half of one percent of the total future amount of office space in the Downtown & Vicinity.

LAND USE

The existing 501-505 Washington Street building, 517 Washington Street building, and 545 Washington Street building, containing a total of 4,050 sq. ft. of retail / restaurant uses and 79,100 sq. ft. of office uses would be demolished. The new building Transamerica III would contain approximately 8,600 gsf of retail space at ground level, 136,000 gsf of office space above the first floor, 21,500 gsf of parking area, 6,000 gsf of loading and ramp area, and 6,730 gsf of mechanical floor area. The net increase of commercial space on the new Transamerica III site would be 56,900 gsf of office space and 4,550 gsf of increased retail space. Net increase in employment on the site would be about 450 persons.

The intensification of office uses at the site resulting from the project would continue office development in the project vicinity. The Financial District has been characterized by office uses and downtown support businesses such as parking, retail, printing, and other services. The project would be similar to land uses currently found on the project site and in the vicinity. The project would not change the existing office-retail character of the site or vicinity.

NOTE - Land Use

/1/ The forecasting method and background is described in the Downtown Plan EIR (pp. IV.B.1-8, IV.B.12-43, IV.B.54a-61, and Appendices G and H). In addition, the forecasts of future office space and employment, and an explanation of the methods used, can be found in the *South of Market Plan EIR*, pp. 66-85 and Appendix B, and in the *Mission Bay EIR* Vol. Two, pp. VI.B.13-28, VI.B.38-79, VI.B.106-112, and VI.B.119-123, and Vol. Three, Appendix B (see especially *Mission Bay EIR*, Appendix B, pp. XIV.B.24-30 for a comparison to the Downtown Plan EIR forecasts). The method was not changed in forecasts prepared for the *South of Market Plan EIR* and *Mission Bay EIR* analyses, but several changes were made in the analysis and results.

B. SHADOW AND WIND

SHADOW

The *City Planning Code* requires that shadows on publicly accessible open space be minimized (Section 147). New buildings are to be shaped, consistent with the dictates of good design and without unduly restricting the development potential of the site, to

reduce substantial shadow impacts. The factors determining shadow impacts include the following: amount of area shadowed, duration of the shadow and the importance of sunlight to the utility of the type of open space being shadowed.

Shadow patterns for existing and proposed buildings in the project area (including existing buildings on the site), and the project are shown for 10:00 a.m., noon, and 3:00 p.m. for the four seasons: during winter and summer solstices when the sun is at its lowest and highest and during the spring and fall equinoxes when the sun is at its mid point (see Figures 11 through 14, pp. 66 - 69). Conditions from July through November mirror the conditions from January through May, using solar time. The analysis includes shadows cast on streets, sidewalks, pedestrian areas, and open space in the area potentially affected by the proposed project. A shadow outline of the project as though cast on the ground without intervening buildings is shown to illustrate the scale of the project in relation to structures that would surround it. The diagrams show existing and approved building shadows and new shadow due to the project. See also the discussion of open space below and of Proposition K shadow, on p. 65.

Open spaces in the project vicinity include the podium-level Maritime Plaza, one block east of the project site, between Battery, Clay, Washington and Drumm Streets, and Redwood Park, on the project block immediately west and southwest of the project. The project would re-landscape Redwood Park and improve open space on Mark Twain Alley (see Chapter III, Project Description, pp. 30-32)

The nearest open space protected by the sunlight ordinance (Proposition K) in the vicinity of the proposed project is Maritime Plaza. Project shadows on affected open space, including this space, are discussed below.

December 21 (PST)

At 10 a.m. and 12 noon on December 21 (see Figure 11, p. 66) the project would not add any new shade to streets, sidewalks or open space, because of shadow from existing buildings in the vicinity. At 12 noon, the project would add about 2,000 sq. ft. of shade to the roof of the two-story portion of the Pacific Lumber Co. building across Washington Street from the project site. At 3 p.m. on December 21, the project would not add new shade to streets, sidewalks or open space in the vicinity.

March 21 (PST)

At 10 a.m. on March 21, (see Figure 12, p. 67) the project would add about 1,600 sq. ft. of shade to Washington Street and about a 30-foot-long strip of its north sidewalk, west of Sansome Street. The project would add about 1,400 sq. ft. of shadow on the roof of the 524 Washington Street building. At 12 noon, the project would shade about 3,000 sq. ft. of Washington Street north of the site, including about 130 linear ft. of the north sidewalk. At 3 p.m., the project would not add shade to streets, sidewalks, or open space.

June 21 (PST)

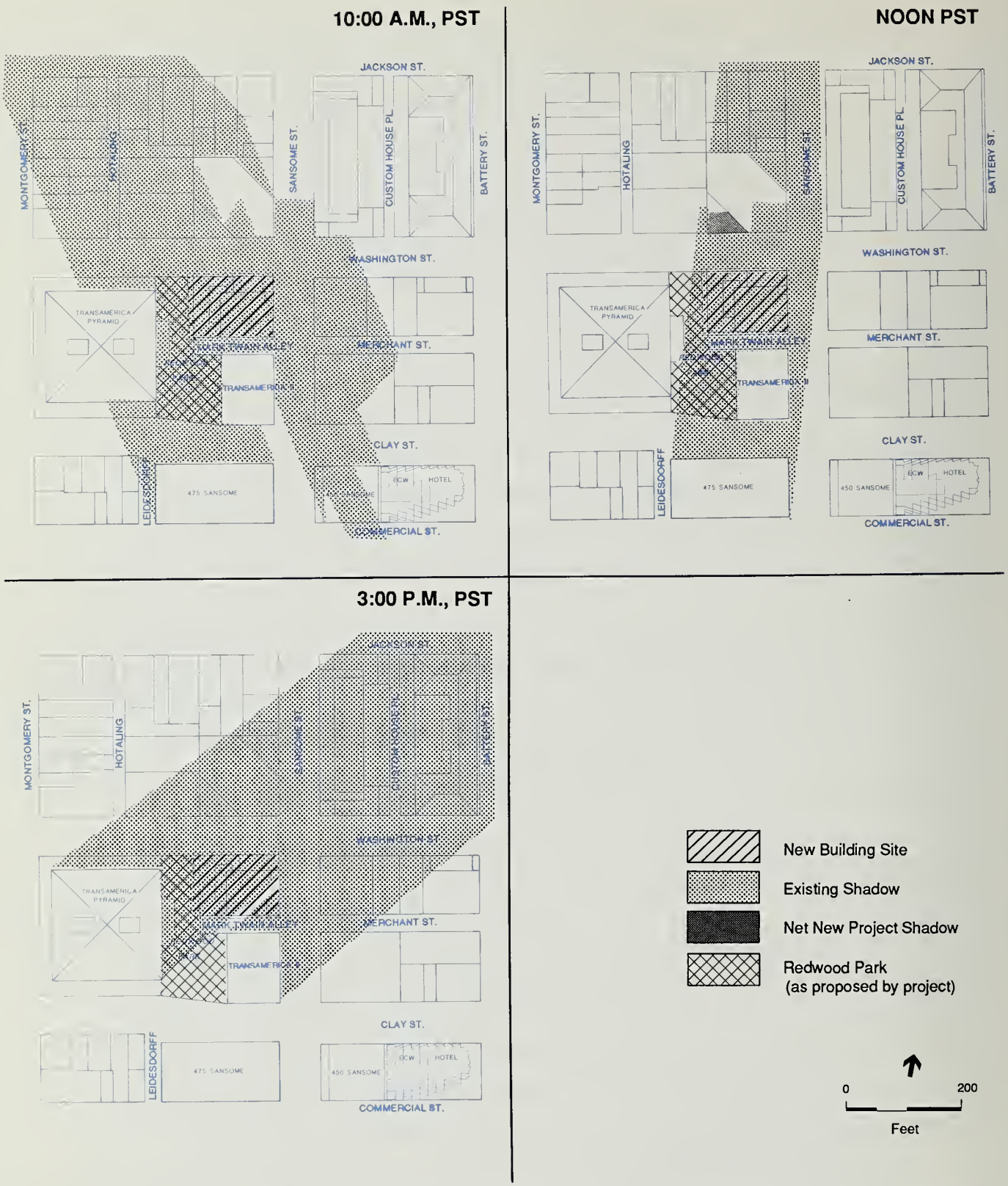
At 10 a.m. on June 21, (see Figure 13, p. 68), the project would shade about 6,600 sq. ft. of Washington Street north and west of the site, and about 1,500 sq. ft. of the widened sidewalk at the base of the Transamerica Pyramid. Redwood Park would essentially be in shade at this time, from existing buildings and the project. The project would add about 1,900 sq. ft. of shade, completing the shading of 21,400-sq.-ft.-park at that time. At 12 noon, the project would add about 3,000 sq. ft. of shade to the northern portion of Redwood Park, representing about 15% of the park, and adding about 50% to existing shading. The 21,400 sq. ft. park would then be about 50% in shade at that time. The project would add about 6,600 sq. ft. of shade to Washington St. at this time. At 3 p.m. in June, the project would shade about 3,500 sq. ft. of Washington Street north of the site, and about 1,500 sq. ft. of Sansome Street east of the site.

September 21 (PDT)

At 10 a.m. on September 21 (see Figure 14, p. 69), the project would add shade to about 500 sq. ft. of Washington Street and about 60 linear feet of its north sidewalk, and about 2,800 sq. ft. of the roof of the 524 Washington Street building, north of the site. At 12 noon, the project would shade about 1,500 sq. ft. of Redwood Park, adding to about 15,000 sq. ft. of existing shade. The park would then be about 75% in shade at that time. At 3 p.m., the project would shade about 1,500 sq. ft. of Washington Street and its north sidewalk, and 500 sq. ft. of Sansome St. northeast of the site.

Proposition K

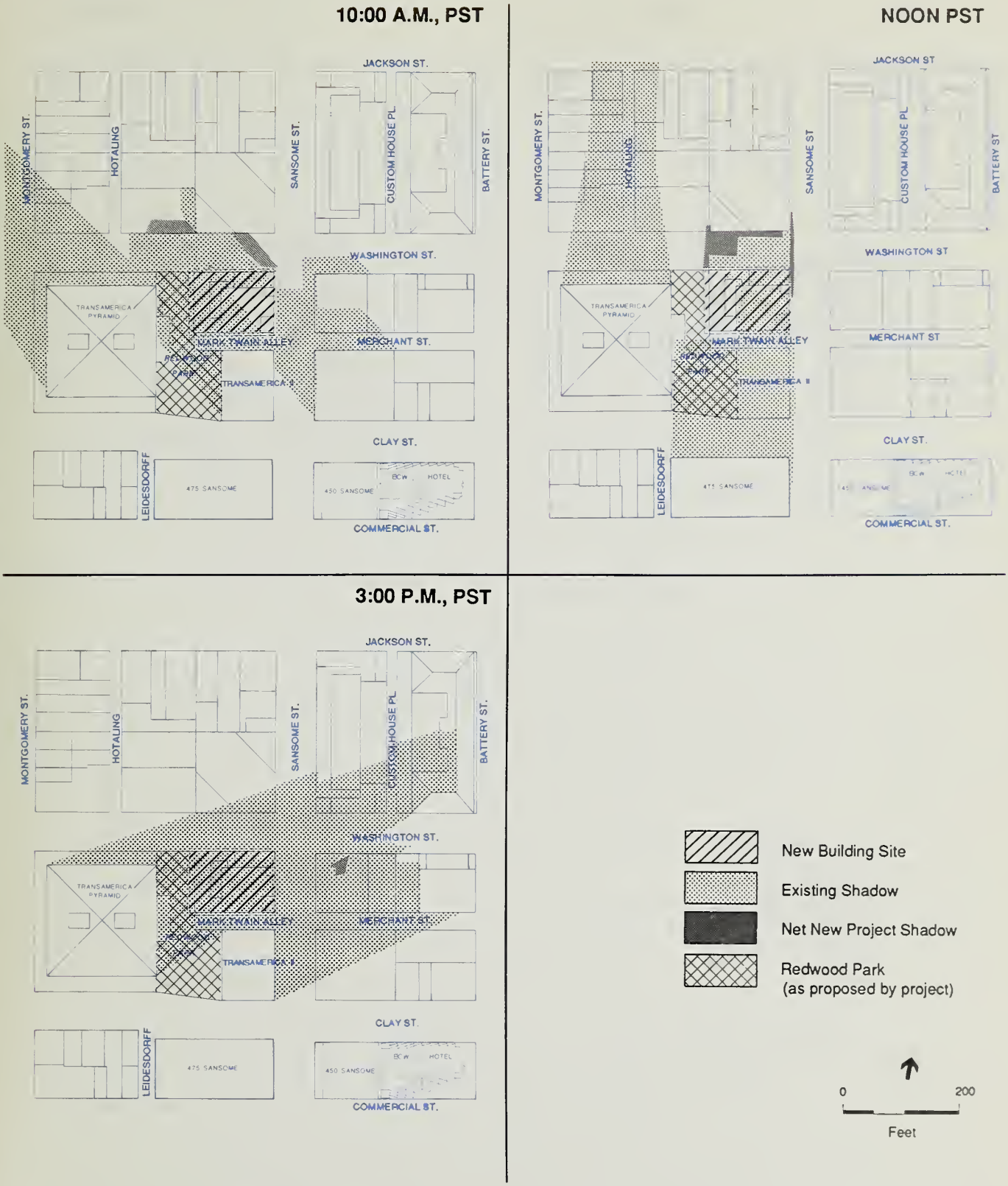
In June 1984, the voters of the City and County of San Francisco approved Proposition K, the sunlight ordinance. Section 295 of the *City Planning Code*, which implements



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

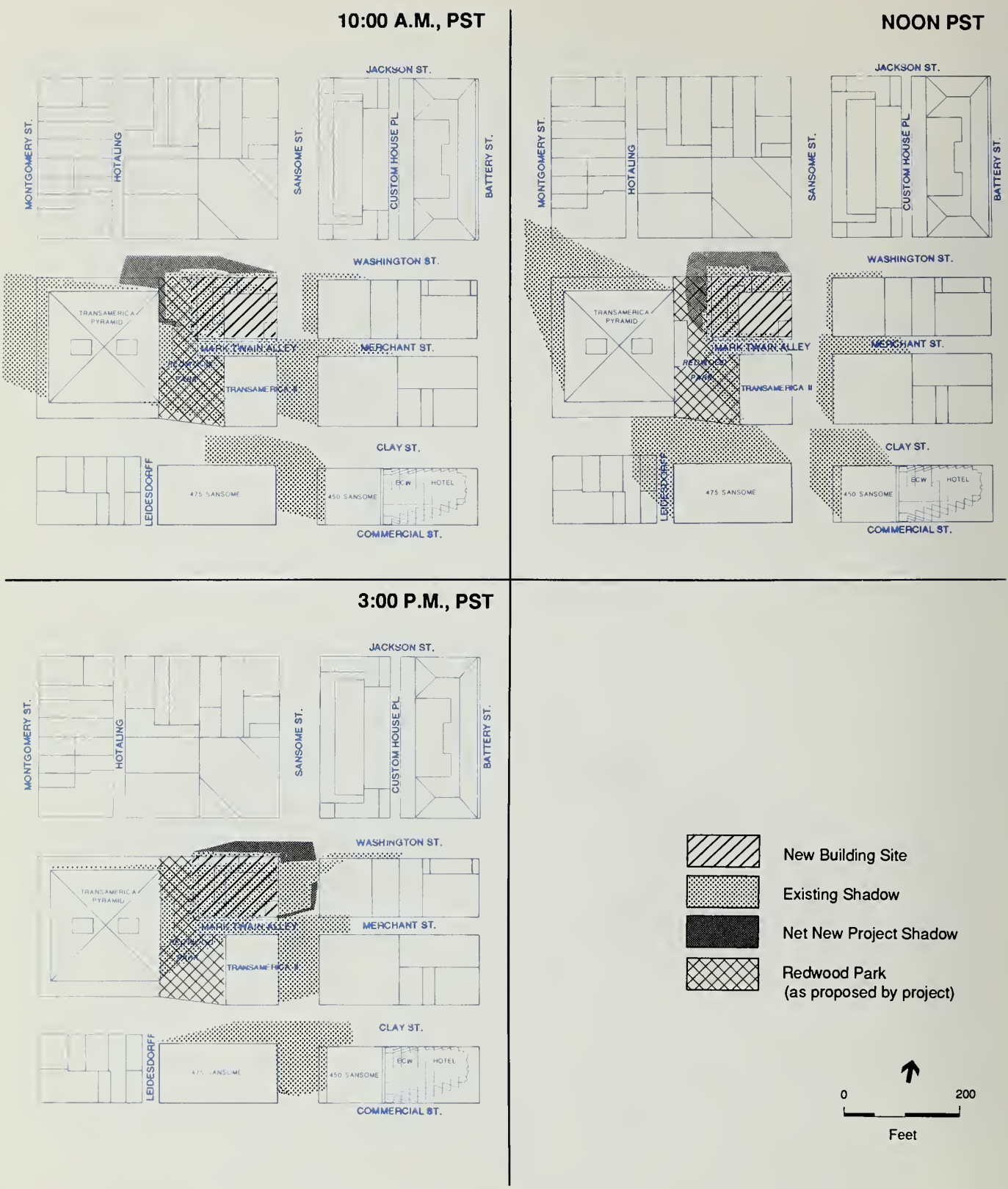
Figure 11
Project Shadow Pattern - December 21
(10:00 a.m., noon, 3:00 p.m. PST)



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

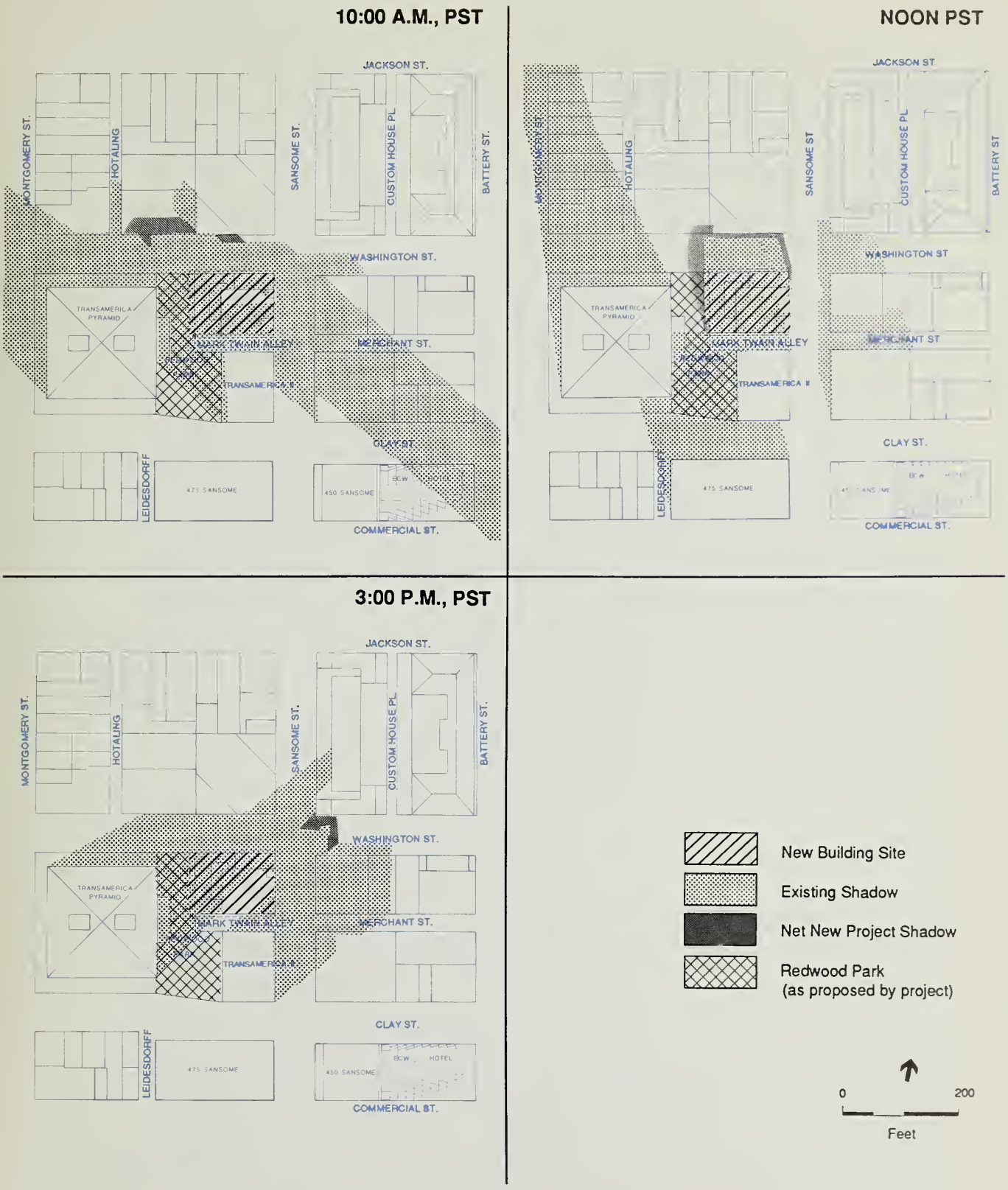
Figure 12
Project Shadow Pattern - March 21
(10:00 a.m., noon, 3:00 p.m. PST)



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 13
Project Shadow Pattern - June 21
(10:00 a.m., noon, 3:00 p.m. PDT)



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 14
Project Shadow Patterns - September 21
(10:00 a.m., noon, 3:00 PDT)

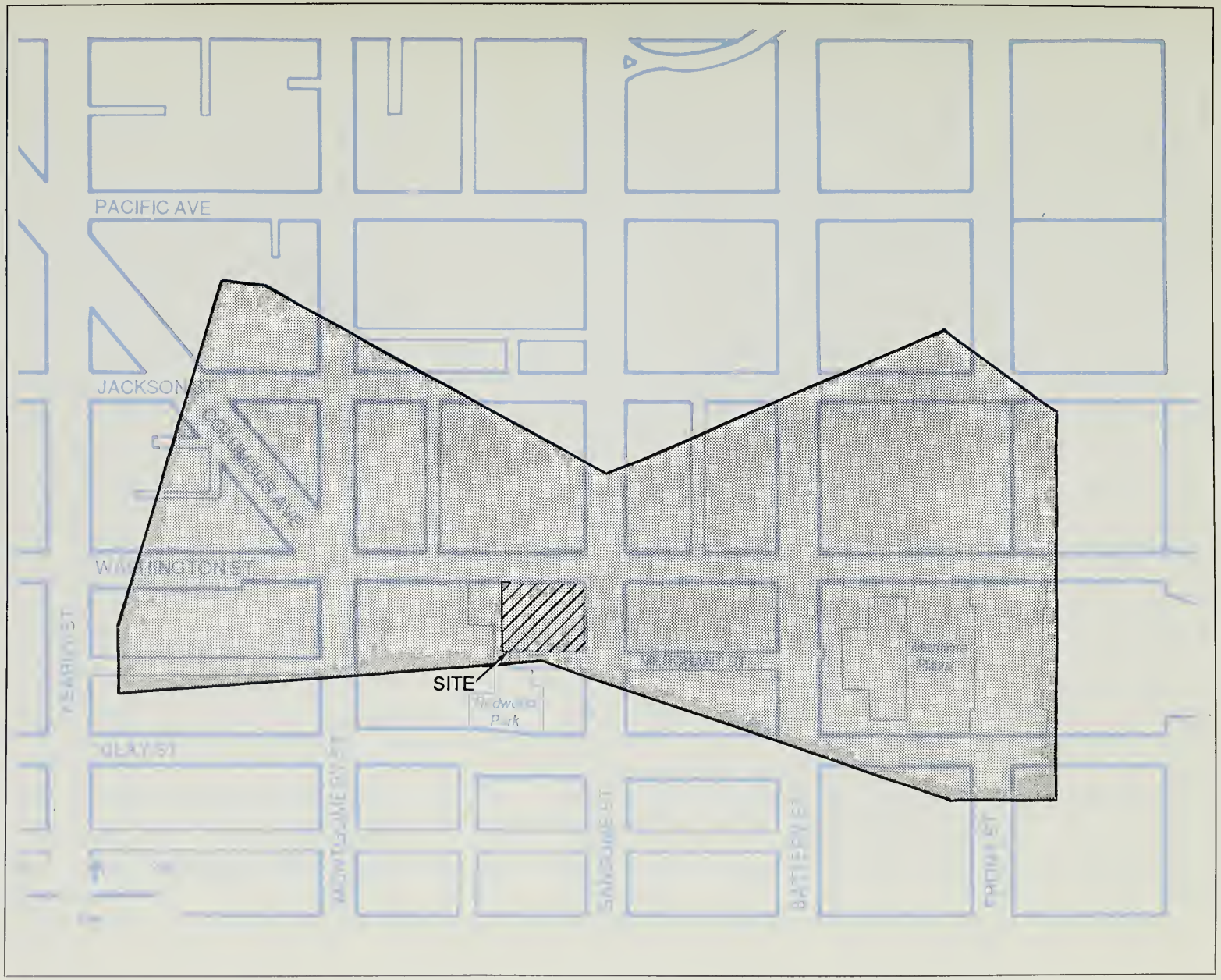
Proposition K, requires disapproval of any project shading property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission unless the City Planning Commission, in consultation with the General Manager of the Recreation and Park Department and Recreation and Park Commission, determines that such shade would have an insignificant adverse impact on the use of such property. For Maritime Plaza, the two commissions have adopted criteria allowing no new shade during the times defined by Proposition K.

Figure 15, p. 71, shows the maximum extent of project shadow on potentially affected property as though cast on the ground without existing intervening buildings. For Maritime Plaza, the project would add shade to the westerly edge of the podium-level Maritime Plaza (east of the project site at Battery, Clay, and Washington Streets), at about one hour before sunset in August and early September, and in mid-March to late April. The project would add up to about 650 sq. ft. of new shade at one time, for up to about eleven minutes, at 7:00 p.m. PDT in August and 6:30 p.m. PDT in early September, and about 6:00 p.m. PST in March and 7:30 p.m. PDT in April (see Figure 16, p. 72). Cumulatively, the project would add a total of about 4,300 sq. ft. of shade per year to Maritime Plaza./1/ Existing buildings currently shade most of the western portion of Maritime Plaza in the late afternoon. The new shadows would complete the shading of the western part of Maritime Plaza at these times. Some shadowing would continue after these times, but would occur less than one hour before sunset, and thus would not be subject to Proposition K./1/

WIND /2/

The *City Planning Code* Section 148, Reduction of Ground-Level Wind Currents in C-3 Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the *Code* requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single hour of the year, or 0.011416% of the time. The 7 mph and 11 mph comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the 26 mph hazard criterion is based on wind speeds that are measured for one hour and averaged; this is equivalent to a one-minute average of 36 mph.

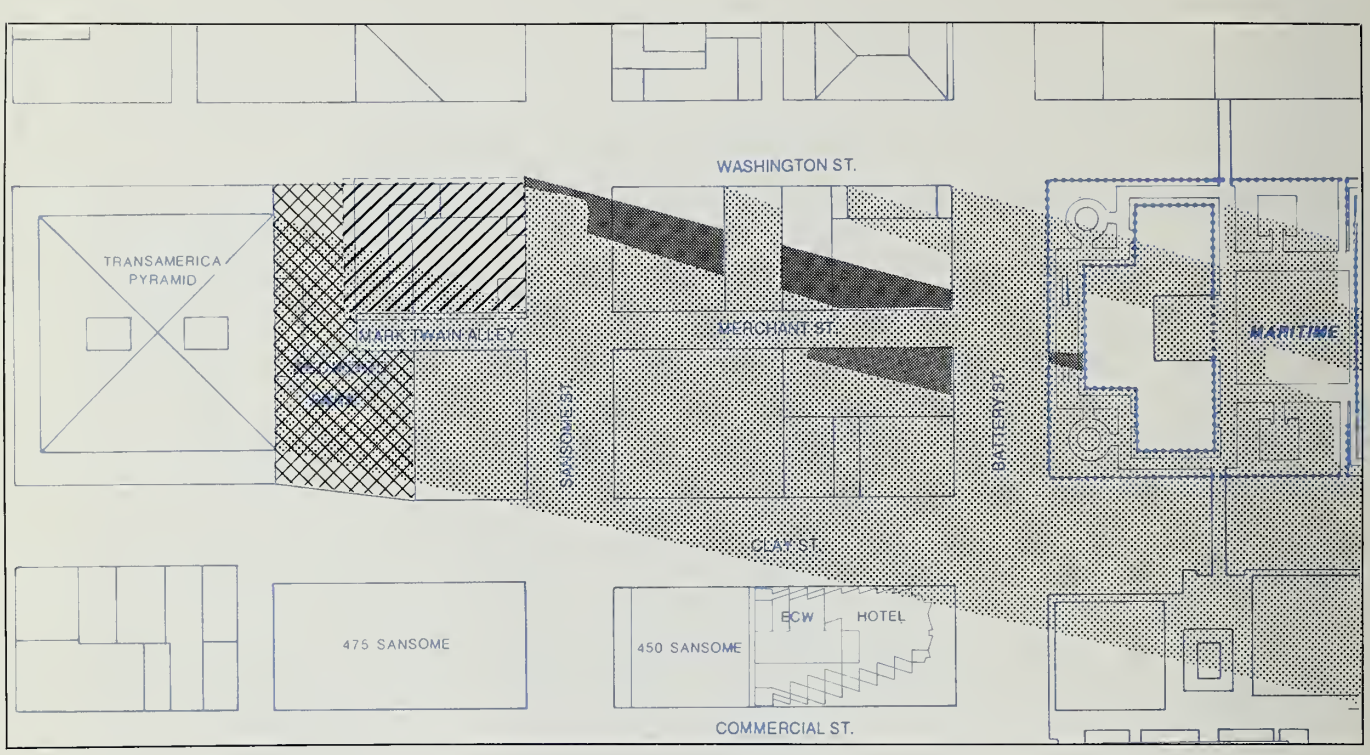
Prevailing winds in San Francisco are from the northwest, west-northwest, west, and west-southwest. Using a wind tunnel and a scale model of the downtown



Transamerica III ■

SOURCE: San Francisco Department of City Planning

Figure 15
Year Round Shadow Trace



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 16
Project Shadow Pattern
April 21 (5:51 p.m. PDT)

San Francisco area surrounding the project site, wind speed measurements were made at 22 surface locations near the project site. The wind-tunnel analyses included configurations of the existing setting and the existing setting plus the project, and included separate tests for three of San Francisco's four major prevailing wind directions: northwest, west-northwest, and west (the west-southwest wind direction is included only in South-of-Market projects where street configuration is such that west-southwest winds have greater influence). Existing conditions included approved and under-construction projects in the vicinity.

Wind test data were combined with wind records to predict the wind speed that would be exceeded 10%, and 0.011416% (one hour per year), of the time at each of the 22 locations. The predicted winds were then compared to the comfort and hazard criteria of the *City Planning Code*, established in the Downtown Plan. (See Appendix B, p. A.31 to A.38 for a summary of the full wind analysis). The locations of the measurement points and the results of the wind tunnel study, including compliance with the comfort criteria, are shown and summarized in Appendix B, Figure B-1 p. A.38. These results represent a wind-tunnel test carried out in March 1990, and two additional tests carried out in December 1990 and January 1991. Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time, and about 0.01% of the time when referring to the hazard criterion./3/

Existing

Wind speeds in the existing setting range from 7 mph to 20 mph at the 22 locations tested. The comfort criterion for pedestrians is currently exceeded at nine of the 22 ground locations. The 7 mph seating comfort criterion is exceeded under existing conditions within Redwood Park. Relatively strong winds with speeds from 12 mph to 20 mph occur along Washington Street from Montgomery Street to Battery Street, specifically near the intersection of Sansome and Washington Streets. Winds between 12 mph and 13 mph also occur on Clay Street midway along the project block between Montgomery and Sansome Street. The strongest existing wind, 20 mph, occurs on Washington Street approximately midway between Sansome and Battery Streets. The wind hazard criterion of 26 mph occurring for more than one hour annually is violated at this location. The major features that influence the near surface winds at the project site are topography and the presence of the Transamerica Pyramid, the Holiday Inn - Financial District, and the Montgomery - Washington Tower. Westerly to

northwesterly winds approach the Pyramid and project site virtually unaffected by any other large buildings or other wind sheltering features.

Project Effects

The project would result in winds ranging from 8 mph to 22 mph. The project would cause wind speeds to decrease at 8 of the 22 locations, remain the same at 5 locations, and increase at 9 locations. Along Washington Street, excluding the intersection with Sansome Street, winds would increase by one to two mph at three locations and decrease by one to two mph at four locations. Along Sansome Street, excluding the intersection with Washington Street, winds would increase at two locations and decrease at one location. Along Clay Street winds would decrease about two mph, and, as such, they would meet the pedestrian comfort criterion. At the intersection of Sansome and Washington Street, wind speeds would increase at three locations and decrease at one. The wind speed at the northern portion of Redwood Park would increase from 10 to 13 mph, thus exceeding the pedestrian comfort criterion. This increase could be the result of the reduced density of trees within the park.

The project would cause winds at one location, at the intersection of Clay Street with Sansome Street, to increase from 7 mph to 8 mph, thereby exceeding the seating area criterion. The pedestrian comfort criterion of 11 mph would be exceeded at seven locations with the project: in the northern portion of Redwood Park, on Washington Street midway between Sansome and Battery Streets, at the intersection of Sansome and Jackson Streets, at the intersection of Sansome and Washington Streets, and at the intersection of Washington and Montgomery Streets. The strongest wind would occur at a location midway between Sansome and Battery on Washington Street, where the 26 mph hazard criterion would continue to be exceeded. The project would not change this condition.

In summary, of 22 locations tested in the wind-tunnel study, there are nine locations where the pedestrian criterion is exceeded under existing conditions. With the project, there would be seven points at which the pedestrian criterion would be exceeded. One of these points, within Redwood Park, would change from meeting the criterion to exceeding the criterion. At three points along Washington Street and Clay Street on the project block, wind speeds would decrease to a level at or below allowable limits. The hazard criterion is and would continue to be exceeded at one location.

The project would require an exception to Section 148, as part of Section 309 review of the project, in order to establish the appropriateness of the comfort criteria exceedances described above.

NOTES - Shadow and Wind

/1/ Based on information and analyses by Department of City Planning staff using the "Modeler" computer program for Proposition K analyses.

/2/ This section is based on a study entitled, *Wind-Tunnel Test of the Transamerica III Project*, March 1, 1990, and January 1991 prepared by Bruce R. White, Ph.D., for Environmental Science Associates, Inc. A summary of the Wind Study Methodology is included in Appendix B, pp. A.31 to A.38; the complete report is on file and available for review at the Department of Planning, Office of Environmental Review, 450 McAllister Street, San Francisco, CA.

/3/ Equivalent wind speed is an hourly wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians.

/4/ Murakami, S., "New Criteria for Wind Effects on Pedestrians," Journal of Wind Engineering and Industrial Aerodynamics, 7, p. 289-309, 1981.

C. CULTURAL RESOURCES

Subsurface cultural resources dating from the Gold Rush and City Building periods could be encountered on the site during excavation for the Transamerica III foundation and basement, construction of new parking area (part of which would be beneath Redwood Park), between Transamerica III and the Pyramid and excavation for, and construction of, the tunnel (connecting the Transamerica III and Transamerica II subsurface loading areas) under Mark Twain Alley./1/ It is probable that architectural remains dating from the Gold Rush or City Building Periods, in varying states, may be encountered within the project site. Potential artifacts of consequence associated with the Gold Rush and City Building Periods are likely to consist of commercial and household refuse or supplies, building materials and architectural remains, possible maritime remains, as well as debris from the various fires that swept through San Francisco during the early 1850s. Discoveries of such artifacts from similar sites have served to expand the historic record of people and events of the Gold Rush and City Building eras.

NOTE - Cultural Resources

/1/ Archeo-Tec, Consulting Archaeologists, *Archival Cultural Resources Evaluation of the Transamerica III Project, San Francisco, California, January 1990.* This report is on file and available for public review at the Department of City Planning, 6th Floor, 450 McAllister Street, San Francisco.

D. URBAN DESIGN AND SITE VISIBILITY

There would be a contrast between low-rise and high-rise development surrounding the project block, including the north side of Washington Street where two-story buildings face the Transamerica Pyramid, the east side of Sansome Street where Fire Station No. 13 faces the project site, and the south side of Clay Street where two-story buildings stand between high-rises. (See Figures 17 and 18, pp. 77 to 78). The ten-story project would be taller than the existing two- to eight-story buildings north of the project site in the Jackson Square Historic District. The project would be shorter than the other two buildings on the project block, the 48-story Transamerica Pyramid and the 19-story Transamerica II building. Transamerica III would be transitional in scale between the smaller buildings north of Washington Street and the taller buildings of the Financial District to the south.

Views of the project would be blocked by taller buildings to the south, east, and west. The project would be visible from street-level viewpoints to the east; those views would be dominated, however, by the taller Transamerica Pyramid. From Telegraph Hill, the project would be visible as part of the group of existing and under-construction high-rise structures within the Financial District.

Transamerica III would be visible along the Washington Street corridor, and from the Jackson Square Historic District to the northwest, because the buildings that face the project across Sansome and Washington Streets are primarily two- to three-stories. At 10 stories, Transamerica III would provide a visual transition between these smaller buildings north of the project site , the two- to eight-story Pacific Lumber Company building facing the project across Washington Street, the 19-story Transamerica II office building, and the 48-story Transamerica Pyramid on the project block.

E. BIOLOGY

Redwood Park includes 69 Coast Redwoods (*Sequoia sempervirens*) planted in 1972 as part of the Transamerica Pyramid project (see Figure 19, p. 79). An arborist prepared a report on the health and structural soundness of the redwood trees in Redwood Park (See Appendix D, pp. A.38 to A.45, for report). The trees were not thinned as they matured; as a result of crowding, 25 redwood trees are unhealthy or structurally unsound./1/ Proposed modifications to the plantings in Redwood Park would include: removal of the 25 unhealthy trees; temporary boxing of 24 healthy redwoods,

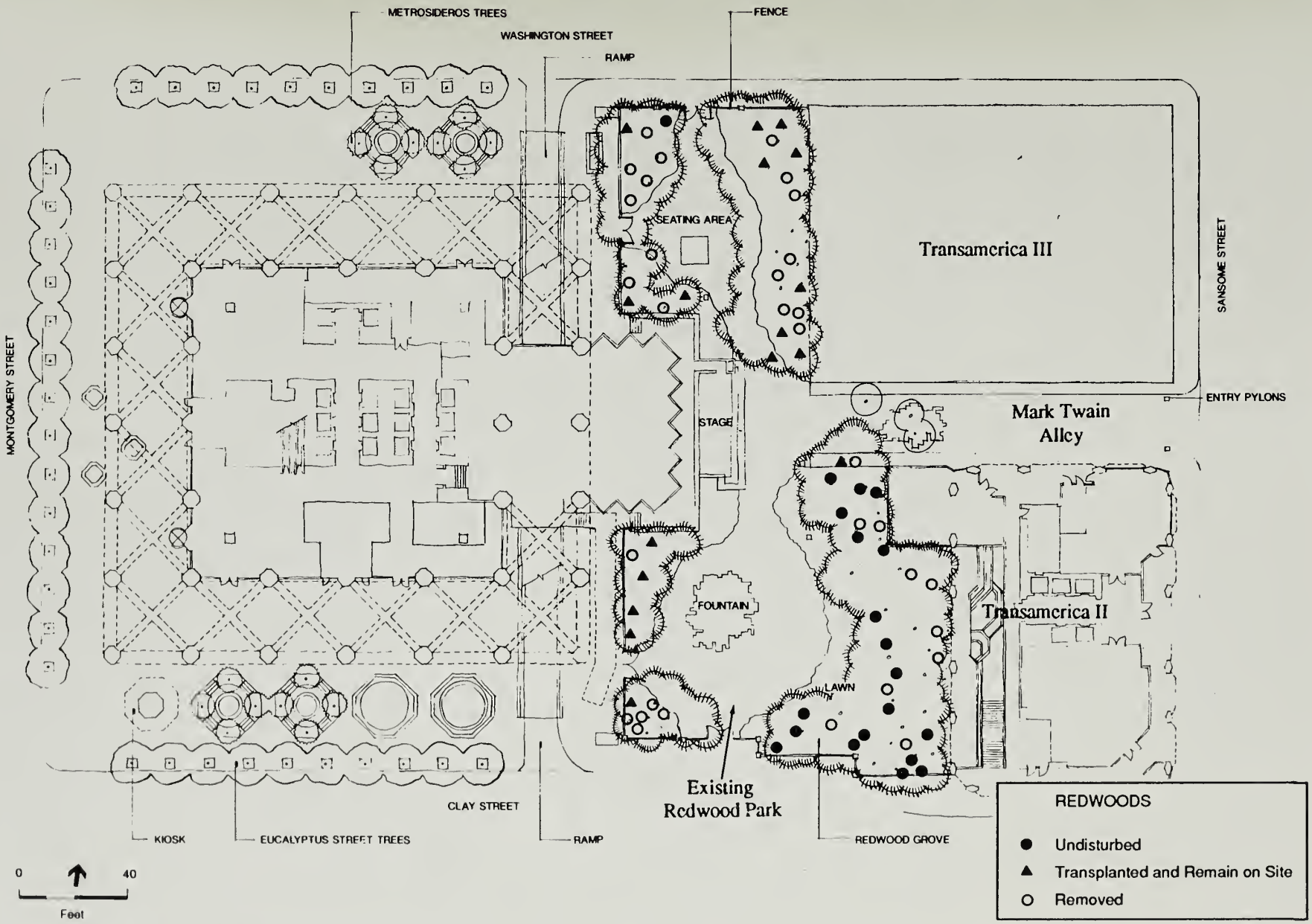
SOURCE: Skidmore, Owings and Merrill

Figure 17
Photomontage of Project
West Across Washington Street
East of Sansome Street

SOURCE: Skidmore, Owings and Merrill

Transamerica III ■

Figure 18
Photomontage of Project
South Across Washington Street
East of Montgomery Street



SOURCE: Skidmore, Owings and Merrill and Michael Painter Associates

Transamerica III ■

Figure 19
Proposed Disposition of Trees
on the Project Site in Redwood Park

currently adjacent to the building site, to allow construction of the foundation and basements; replanting of 17 healthy redwoods in the park; and installation of 52 ornamental trees (probably flowering cherry) in Redwood Park and Mark Twain Alley. (See Figure 7, p. 31) The remaining seven, boxed, healthy trees would be donated by the project sponsor to the Department of Recreation and Parks for replanting in Golden Gate Park. Twenty healthy redwoods would remain undisturbed on the site at their present locations. Redwood trees have shallow root systems, and according to the arborist's report would not be damaged by the boxing, the transplanting or by being relocated over a basement./2/

The approximately 50 existing street trees (predominantly eucalyptus) on the project block would be replaced by about 90 new street trees, probably ginkgo. Removing or replanting landcaping in planted areas is a normal part of maintenance of those places and would not constitute a significant effect on the natural environment.

NOTES - Biology

/1/ Barrie D. Coate and Associates, *An Analysis of the Redwood Trees at Transamerica Park*, San Francisco, CA January 15, 1990.

/2/ Coate, Barrie D., consulting arborist, telephone conversation with Steve Weindel, Skidmore, Owings and Merrill, March 1, 1990.

F. TRANSPORTATION

CUMULATIVE CONTEXT

Introduction

The transportation sections of the *Mission Bay* and *South of Market Area Plan EIRs* address various regional transportation impacts in 2000 (the *Mission Bay EIR* also analyzes transportation impacts in 2020). The Mission Bay transportation impact analyses evaluate travel generated by Mission Bay in the context of growth in travel projected for the rest of the City and Bay Area. The South of Market analyses do the same for that area. It is growth in the City and region that would result in the greatest impact on most of the transportation systems studied.

Using slightly different analytical methodologies, the two EIRs employ the same basic screenline approach to study regional transportation impacts of San Francisco employment growth. Results differ somewhat, based on the differences in forecasting

techniques, but generally by less than five to ten percent; this difference is well within the range of accuracy of ten-year forecasts. Therefore, the two sets of results are compatible. This summary of cumulative transportation effects will report largely from the *Mission Bay EIR*, with *South of Market Plan EIR* results included where there is notable relevant information.

In summary, both EIRs show that by 2000, congested highway conditions would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. The East Bay corridor would be the most congested, the Peninsula the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

The proposed project at 545 Sansome Street is expected to be completed, occupied and the amount of net new space in the downtown attributable to the project absorbed by 2000. Therefore, the impacts of the project and its contribution to cumulative transportation impacts would occur primarily in the 1985-2000 context. The information from the *Mission Bay EIR* for 2020 was prepared for the purposes of analyzing full buildout impacts of Mission Bay in a proper cumulative context, and is more speculative and subject to change. It is presented for the reader's information.

Effects of the Loma Prieta Earthquake

While many of the downtown streets and intersections have experienced changes in traffic volumes as a result of closure of damaged freeway segments, most of them are expected to be only temporary. As freeway repairs are completed, traffic is expected to return to its pre-quake patterns. Although not all repair plans have been finalized, it has been necessary to make certain assumptions about the transportation system that would be in place by the year 2000 to provide a reasonable assessment of future conditions. The following two future scenarios were the basis for the transportation analysis:

- Freeway Up Scenario - All freeways, including The Embarcadero, I-280 and U.S. 101, were assumed to be back in full operation as in pre-quake conditions. The highway impacts discussion below, under "Regional Travel", as reported in the *Mission Bay* and *South of Market Plan EIRs*, reflects projected levels of service assuming those pre-quake travel distribution patterns.

- Freeway Down Scenario - The Embarcadero Freeway is assumed to be removed and replaced with a surface roadway from the Mission Street / Main Street and Mission Street / Beale Street ramps north. The Main Street / Beale Street ramps, or a comparable facility, were assumed to be fully operational. U.S. 101 ramps at Turk and Golden Gate Streets and the section of I-280 between the U.S. 101 interchange and Army Street were assumed to be repaired or replaced with facilities of comparable capacity. The primary effect of this scenario would be that traffic patterns on San Francisco's local street system that served The Embarcadero Freeway would operate differently from before the earthquake; cumulative travel impacts, as they would affect the regional highway and transit screenlines reported in the *Mission Bay EIR* and *South of Market Plan EIR* analyses may be the same or lower. Therefore, the "Regional Travel" discussion below regarding impacts on highways would still be applicable, if not an overstatement of cumulative impacts on the regional highway and transit systems serving San Francisco./1/

The Analysis Years

The Mission Bay analysis includes studies of transportation conditions in the year 2000, and, in order to account for buildout of the Mission Bay planning area, in the year 2020 in that EIR. Analyses for the 1985-2000 timeframe can rely on reasonably confident estimates of regional transportation capacity improvements as defined by the regional agencies' highway and transit planners. There are no regional transportation plans or policies for 2020. Therefore, the *Mission Bay EIR* uses a different approach for this longer-term analysis. Rather than reporting the impacts of future travel on existing or planned transportation systems, as is done for 2000, the *Mission Bay EIR*, in estimating 2020 travel conditions, uses the transportation system capacities developed for 2000 as a base and identifies the types of transportation improvements likely to be necessary to serve growth in travel between 2000 and 2020.

Regional Travel

Regional travel was analyzed for each of the three major approaches to San Francisco: the North Bay via the Golden Gate Bridge; the East Bay via the San Francisco - Oakland Bay Bridge; and the Peninsula via the U.S. 101 and I-280 freeways.

The regional travel forecasts assume that where severe congestion is projected for the highway system and where parallel transit and ridesharing systems are available, travelers would choose to shift from their autos to fill the capacity available in transit and ridesharing systems. Those shifts are assumed to be made by travelers from the Downtown & Vicinity only, because they would have more transit and ridesharing options than travelers from other parts of the City or region. The shift to transit and ridesharing would be greatest for travel to the East Bay, somewhat less to the North Bay, and none would be expected for travelers to the Peninsula by 2000. (*Mission Bay EIR*, Vol. II, p. VI.E.76-79; *South of Market Plan EIR*, p. 109-112, C-38-40.)

Growth in the entire Downtown & Vicinity including South of Market and Mission Bay and the rest of the region, would be the primary source of travelers trying to cross the Golden Gate and Bay Bridges, and trying to use the U.S. 101 and I-280 freeways at peak hours. (*Mission Bay EIR*, Vol. II, pp. VI.E.71-83; *South of Market Plan EIR*, pp. C-46-47.)

North Bay Corridor

The *Mission Bay* and *South of Market Plan EIRs* found that the Golden Gate Bridge and its approaches operated with moderate congestion (driving speeds of about 35 to 45 mph) in peak hours in 1985. By 2000, heavy congestion on the bridge (a driving speed of about 30 mph) would last about two hours during the p.m. commute period if additional transit capacity between downtown and the North Bay were provided, and a substantial shift from autos to transit and ridesharing were made by travelers from the Downtown & Vicinity. If no shift from 1985 transit use levels were to occur, the p.m. peak period of heavy congestion on the Bridge would last for about four hours in 2000.

Golden Gate Transit indicates that it would be able to increase its bus and ferry capacity between downtown and the North Bay by 2000 in response to the demand generated. Golden Gate Bus ridership would almost double, with projected levels of service (LOS) of D during the p.m. peak hour and LOS C during the p.m. peak period. Golden Gate Ferry ridership would grow by about 60% from 1985 to 2000 and operate at LOS B during the p.m. peak hour and period. Ridesharing is projected to increase by 7 to 15% between 1985 and 2000 in the North Bay.

By the year 2020, heavy p.m. peak congestion on the Golden Gate Bridge could last about four hours, assuming the levels of transit and ridesharing used in 2000, if there were no additional transportation improvements between 2000 and 2020. The *Mission Bay EIR* indicates that by that time, the need to consider major new transportation infrastructure and transit systems will have become apparent. The *Mission Bay EIR* provides examples to illustrate the magnitude of improvements that could be necessary; those mitigation measures, therefore, are not prescriptive, but indicative of the level of investment required to respond to future travel demand, which would require in-depth review and analysis in the next phase of regional transportation planning. Those mitigation measures include adding a second deck to the Golden Gate Bridge to provide transbay capacity for new bus and carpool lanes, or a light-rail line, either of which would extend between downtown San Francisco and Sonoma County. (*Mission Bay EIR*, Vol. II, pp. VI.E.31-34, 39, 41, 71-92, 94-125, 129-134, 214-215, and 225-226; *South of Market Plan EIR* pp. 98-105, and 111-124.)

East Bay Corridor

There currently is virtually no room for additional vehicle traffic on the eastbound Bay Bridge approaches between 4:00 p.m. and 6:00 p.m. While the growth in travel demand on the Bay Bridge from the Downtown & Vicinity could be served by shifting those commuters from autos to transit and increased ridesharing, trips to or from other areas of the region are not well served by transit and would continue to be made primarily in private vehicles.

Even with the substantial shift to transit and ridesharing assumed in the analysis for travelers from the Downtown & Vicinity, the Bay Bridge would operate at capacity for about 4.5 hours in the p.m. peak in 2000, resulting in severe congestion on the San Francisco approaches to the bridge, travel speeds of less than 30 miles per hour, and heavy congestion on the bridge itself every weekday afternoon. Were the shift to transit and ridesharing from 1985 levels not to occur, the p.m. peak period of severe congestion in 2000 would extend for more than 5.5 hours.

By 2000, the numbers and proportion of commuters from the Downtown & Vicinity on BART during the p.m. peak period would be substantially higher. The number of trips on AC Transit would increase by about 65% based on the service available and the need to accommodate some riders who would otherwise use BART if ridership conditions were less crowded by 2000.

The ratio of passengers to seats on BART would increase from 1.30 in 1985 to 1.63 in 2000 (LOS F). AC Transit ridership would increase from 0.85 passengers per seat in 1985 to 1.30 in 2000 (LOS E). The capacity of BART is based on the maximum capacity of BART's computer system to track trains. The crowding projected for BART could not be fully mitigated during the peak period because of the system's technical operating limits.

An increase of seven percent in ridesharing from the Downtown & Vicinity across the Bay Bridge is projected for 2000. Even with substantial shifts to transit and ridesharing by commuters from the Downtown & Vicinity, by 2020 severe congestion on the Bay Bridge and its approaches would last for more than five hours in the p.m. peak period. The number of regional vehicle trips which could not be served by the Bay Bridge during the p.m. peak period (4:00-6:00 p.m.) would grow from about 3,100 vehicles in 2000 to about 5,800 in 2020.

Mitigating those levels of congestion would require consideration of major changes to the regional transbay transportation system connecting the West Bay and East Bay. Virtually all of the concepts would require the City to work with MTC, Caltrans, and local government agencies to undertake the regional planning needed to expand transbay transportation capacity. (*Mission Bay EIR*, Vol. II, pp. VI.E.31-34, 37-41, 71-92, 94-124, 126-127, 129-133, 215-216, and 226-230; *South of Market Plan EIR* pp. 98-105, and 111-124.)

Peninsula Corridor

Between 1985 and 2000, traffic would increase on U.S. 101 and Interstate 280, the freeways serving the Peninsula. There would be less congestion, however, on those routes at the San Mateo County Line than on the Golden Gate and Bay Bridges. Both U.S. 101 and I-280 were only moderately congested at the San Mateo County line in 1985. In or near San Francisco, the capacity of local streets, U.S. 101, and I-280 would be sufficient to handle future travel demand; the switch from highway to transit modes by Downtown & Vicinity commuters assumed for the Golden Gate and Bay Bridges would not be required for the routes serving the Peninsula. The transit analysis for 2000 and 2020 in this regional corridor therefore uses the same rates of transit capacity as in 1985.

U.S. 101 at the San Mateo County line would operate at capacity for about three hours in the p.m. peak in 2000, with heavy congestion and speeds of 30 miles per hour

occurring during that period. By 2020, heavy congestion on U.S. 101 would last for over three afternoon hours. I-280 would operate with only moderate congestion at the county line in 2000 and 2020 with speeds averaging 35 to 45 miles per hour throughout the peak period. The congestion projected in 2020 would be reduced if commuters from the Downtown & Vicinity chose to increase their use of transit or ridesharing above the 1985 levels.

Transit ridership to the Peninsula would grow, although not to the extent that transit capacity would have to be increased above the 1985 levels. In 2000, the level of service on transit would remain high during the p.m. peak period (LOS B or LOS C for all carriers), as there would be no system where ridership would be greater than available seats. Use of BART would increase by about 15%, and that of SamTrans would grow by about 40%, while CalTrain ridership would grow by just 5% (if the CalTrain station were moved to Seventh and Channel Streets - it would grow by about 30% if the terminal remained at Fourth and Townsend Streets). In 2020, CalTrain, BART and SamTrans would carry even larger loads, but would continue to operate below capacity (LOS B or LOS C). (*Mission Bay EIR*, Vol. II, pp. VI.E.31-34, 37-38, 42-43, 61-62, 71-92, 94-124, 127-133, 216-217, and 230-231; *South of Market Plan EIR* pp. 98-105, and 111-124.)

Regional Highway Constraint Points

As a result of growth in regional travel demand, the following freeway segments lying beyond the screenlines in the transportation analysis could constrain San Francisco travel: the I-80/580/I-880 interchange in Oakland; the Caldecott Tunnel on State Route 24; I-80 in Alameda and Contra Costa Counties; U.S. 101 in Marin County; and U.S. 101 south of I-380 in San Mateo. (*Mission Bay EIR*, Vol. II, pp. VI.E.133-140.)

Local Streets and Transit

MUNI

For analysis of cumulative impacts on Muni, individual Muni routes were grouped on the basis of the location of their alignments and stops into the "Northeast," "Northwest," "Southwest," and "Southeast" areas of San Francisco, referred to as "screenlines." By 2000, ridership would generally be accommodated on the Muni screenlines. Slight overcrowding (LOS E) would occur on the Northwest screenline during the p.m. peak hour, and on the Northeast screenline during the p.m. peak

period. However, by 2020, all but the Southwest screenline would be operating beyond Muni's load standard (an overall average of 1.25 passengers per seat). Additional service required could include new light rail service in the Geary Boulevard corridor to the Northwest, and in the Bayshore corridor in the Southeast area of the City. (*Mission Bay EIR*, Vol. II, pp. VI.E.34-35, 93-99, 103-104, 114-124, 129-133, 217, and 231; *South of Market Plan EIR*, pp. 98-102, 112-117, C-19-21, and C-37.)

Local Streets

The *Mission Bay* and *South of Market Plan EIRs* assumed the transportation network that existed before the Loma Prieta earthquake to be in place in the future. The discussion below would be applicable if the Freeway Up Scenario discussed on p. 81 were implemented. Severe congestion would continue to occur in both 2000 and 2020 on several of the James Lick (I-80) freeway approaches in the South of Market Area near Mission Bay. Those streets and freeway ramps serve traffic destined for the Bay Bridge and the Peninsula. Several of those streets are heavily congested now. The number of severely congested I-80 approach intersections would increase by 2000 and increase again by 2020.

As a result of the Loma Prieta earthquake in October, 1989, all access from the Financial District to I-80 and the Bay Bridge via the Clay Street and Mission Street / Beale Street ramps and the Embarcadero Freeway (I-480) was eliminated. All of the trips that were served by these ramps now can access I-80 and the Bay Bridge only from ramps adjacent to the First Street / Harrison Street, Fourth Street / Harrison Street and Fifth Street / Bryant Street intersections. The First Street / Harrison Street and Fifth Street / Bryant Street intersections operated at LOS F before the earthquake and would continue to do so in the future when the ramps are restored. Other intersections at or near freeway ramps, such as Fourth Street and Harrison Street, were projected to deteriorate to LOS E or LOS F in the future, with the ramps operating. After the earthquake, with fewer ramps serving about the same volumes as pre-quake traffic, the First Street / Harrison Street and Fifth Street / Bryant Street intersections operate at LOS F before the earthquake and would continue to do so in the future when the ramps are restored. Other intersections at or near freeway ramps, such as Fourth Street and Harrison Street, operate at LOS F and are projected to improve to LOS E or remain at LOS F with the ramps operating. Intersections near freeway ramps are often affected by freeway access queues, as cars waiting to enter the freeway back up to or through

these intersections. This affects local traffic attempting to use streets in these areas. Some traffic will shift and use less congested routes in the future as this problem increases. Continued enforcement of the ordinance passed in 1987 prohibiting blocking an intersection should help to limit this problem.

Assuming that a) the total amount of outbound p.m. peak traffic from the Downtown and Vicinity has not changed as a result of the damaged freeways and b) increases in traffic resulting from cumulative downtown growth would continue as forecast, Transamerica III would contribute the same proportion to cumulative traffic under either the freeway up or freeway down scenarios. The project would contribute less than one percent to total p.m. peak hour traffic. *Mission Bay EIR*, Vol. II, pp. VI.E., 140-148, 166-175, 200-201, and 218-219; *South of Market Plan EIR*, pp. 105-106, and 124-126.) While some traffic from Transamerican III may shift to nearer freeway ramps if damaged structures are repaired or replaced, the overall contribution to cumulative traffic from the prject would not change, and the contribution of the project to any individual ramp would remain under one percent.

For the local street system to operate at the level described above, there would have to be a high level of public transit use in the Downtown & Vicinity. In 1985, about 55% of all afternoon peak-hour outbound trips from the Downtown & Vicinity were on public transit. That level of transit could grow to about 70% of all trips, based on the increased capacity of transit systems expected to be available by 2000, and the congestion levels estimated to occur in the future.

As described on p. 48 and p. 49, San Francisco is pursuing a proposal to demolish The Embarcadero Freeway. Under the Freeway Down Scenario, if implemented, the local streets serving The Embarcadero roadway would operate differently from the manner in which they served The Embarcadero Freeway. Generally, queues and delays at intersections would be lengthened along the street corridors leading to the remaining Bay Bridge ramps during the afternoon commute. Also, an increase in average delays on the Bay Bridge would be expected during the morning commute period. Any proposal for the construction of a new roadway along The Embarcadero will be subject to separate environmental review.

Travel Demand

On the basis of land use, the project would generate about 2,730 net new person trip-ends (pte) per day./2/ Travel generated by existing retail and office space,

leased to tenants in late 1989, on the project site (about 1,090 pte per day) was subtracted from the total new travel (about 3,820 pte per day) from the site to give the net new travel from the project./3/ The trip-generation calculations include travel to and from the project site by both visitors to and employees of the project. Additionally, although expressed on a person trip-end basis, the trip generation includes all travel to and from the project in autos, service vehicles and trucks, on public transit and by other modes (i.e., walking, bicycles, taxis, etc.).

The distribution for project-generated traffic is based on directional percentages previously prepared for the downtown area and published in the 1983 Guidelines. A survey of drivers leaving the Transamerica Pyramid parking garage was conducted as part of this project to determine if any significant changes had occurred to the 1983 distribution pattern. The current survey reasonably reflects the 1983 percentages. Trips that would be generated by the project were distributed to eight general areas of the region. Trips were then assigned to specific modes, depending on the district to which they were assigned./4/ The modal split for the newly generated traffic determines the amount of travel that would use the different types of transportation from the site, including the street system, the transit network and pedestrian facilities. Project vehicle trips are shown in Table 4, and project transit trips in Table 5.

Transit

Four Muni routes stop within one block of the project site. The Transbay Terminal is about six blocks southeast of the site; additional Muni routes stop there, as well as AC Transit, Golden Gate Transit and SamTrans buses. Muni Metro and BART service in the Market Street subway are accessible via the Montgomery Street or the Embarcadero station (five blocks south or southeast of the site). Photographic examples of p.m. peak-hour loadings on Muni vehicles are shown in Appendix D, Figure D-1, pp. A.47-A.49.

During the p.m. peak hour in 1984, most of the transit agencies were found to be operating at Level of Service (LOS) D or better. The exceptions include BART transbay, where conditions were found to be at LOS F, and Muni in the northwest and southwest corridors, where operations were found to be at LOS E. Table D-1, Appendix D, p. A.46, contains descriptions of the various LOS for bus transit. In the p.m. peak hour in 2000, about 85 (0.2%) new Muni trips among all four of the Muni screenlines, and about 59 (0.5%) new BART trips (transbay and westbay) would be

TABLE 4: PROJECT OUTBOUND VEHICLE TRIPS

Mode	Office		Retail		Total	
	Peak Hour	Peak Period	Peak Hour	Peak Period	Peak Hour	Peak Period
Drive Alone	22	34	0	1	22	35
Carpool	7	10	0	0	7	10
Vanpool	0	1	0	0	0	1
Motorcycle	0	0	0	0	0	0
Taxi	0	0	0	0	0	0
Total Vehicle Trips /a/	29	45	0	1	29	46

/a/ Totals may not reflect the sums of numbers as a result of rounding.

SOURCE: Korve Engineering, Inc.

TABLE 5: PROJECT OUTBOUND TRANSIT TRIPS

Mode	Office		Retail		Total	
	Peak Hour	Peak Period	Peak Hour	Peak Period	Peak Hour	Peak Period
Muni	65	101	8	12	72	113
BART	50	79	3	5	53	84
Jitney	1	1	0	0	1	1
Charter Club Bus	2	3	0	0	2	3
Golden Gate Bus	9	14	0	1	9	15
AC Transit	16	25	0	0	16	25
Golden Gate Ferry	3	4	1	1	4	4
Tiburon Ferry	0	0	0	0	0	0
SamTrans	3	4	0	0	3	4
CalTrain	4	7	0	0	4	7
Total Vehicle Trips /a/	153	238	12	19	164	256

/a/ Totals may not reflect the sums of the numbers as a result of rounding.

SOURCE: Korve Engineering, Inc.

generated by the project. Addition of the project p.m. peak-hour Muni riders to the existing (1984) Muni ridership would not increase the loading ratios across any of the screenlines, and thus would not change the LOS. Addition of BART riders from the project to the existing BART ridership would not increase p.m. peak hour transbay or westbay loading ratios or change LOS. While the project would contribute to increases in transit ridership in the major regional transit corridors leading from downtown San Francisco, existing peak-period and peak-hour transit ridership would be increased by less than 0.5%. A ridership increase of this magnitude would not be measurable against the day-to-day fluctuations in transit ridership and would not have a noticeable effect on transit LOS. However, as discussed on pp. 93 to 95, the project would contribute to cumulative increases in ridership on the major regional transit corridors leading from downtown San Francisco that would result in a decrease in LOS for several of the transit carriers.

Project Transit Costs

Muni. The estimated 1985 (most recent available) net marginal cost (or increase in the deficit for Muni operations) per additional ride is $0.28./5/ This deficit-per-ride figure, because it is a marginal cost, is appropriate for a small increase in Muni ridership (such as that requiring one or a few additional vehicle trips). Assessments of costs that would result from cumulative development require the inclusion of additional cost factors and may be best projected using average costs./6/ It is reasonable to conclude that average costs would be significantly higher than marginal costs.

The project would generate about 65,520 peak-period, peak direction rides per year in the year 2000, which would generate a cost deficit to Muni of about $18,346, assuming that the cost-per-ride deficit remains $0.28./7/ The total extent to which this project would offset this deficit through its contributions to the General Fund, the Transit Impact Development Fee, and sales tax revenues is not known. State and federal funds to Muni are decreasing, and the City is reviewing other options for increased revenues.

The sponsor would be required to pay a one-time Transit Impact Development Fee (TIDF) to finance the increased cost of Muni services necessitated by the project, at a rate of $5.00 per gross square foot of net new office construction. On the basis of the $5.00 rate, the project would yield about $567,500. The final determination of TIDF would be made on the basis of a more detailed review of architectural plans submitted to the City.

BART. For the year ending June 30, 1985, the average net operating deficit per passenger trip for BART was about $1.20./8/ On the basis of about 122,470 rides per year in the year 2000,

the estimated annual BART deficit attributable to the project would be about $146,970, assuming that the cost per ride deficit is the same./9/ The project would generate a total of about $20,500 in annual revenues to BART, including about $11,600 in property tax revenues, and about $8,900 from the 75% of the 0.5% transit sales tax allocated to BART. This amount does not include the remaining 25% of the 0.5% BART sales tax revenue distributed by MTC among BART, Muni and AC Transit. After subtraction of BART's revenues from sales and property taxes that would be generated by the project, the net operating deficit of BART resulting from the project would be about $126,470. BART's operating deficit per passenger is likely to decline in real terms as planned service improvements become operational in the future.

Traffic

Local Intersection Traffic

As described in Chapter IV, Environmental Setting, p. 48, the Loma Prieta earthquake damaged a number of freeway segments in San Francisco. As a result, a number of ramps serving those freeway segments have been closed. Among them are the Washington Street / Clay Street ramps, located in the project vicinity. Thus, traffic patterns around the project site have been altered as a result of the ramp closures.

The analysis presented below addresses traffic conditions that include project impacts with the ramps remaining closed, and with the ramps re-opened or otherwise providing pre-earthquake carrying capacities. Although current planning related to The Embarcadero Freeway demolition and roadway replacement includes continued use of Washington Street and Clay Street as access to the replacement facility, the scenario analyzing the closed ramps is included because, at this time, it is unknown when the replacement roadway would be completed.

Recent traffic data for the four study intersections were not available for pre-quake conditions, when the ramps were open. Evening-peak-hour traffic volumes (straight-through and turning movements) at the four intersections adjacent to the project site were counted by Korve Engineering, Inc. in December 1989, after the Bay Bridge was repaired and reopened following the Loma Prieta earthquake./10/ Because of the uncertainty of when (or whether) the ramps will reopen, the analysis presents an assessment of current service levels at local intersections under the no-ramp network condition and future service levels under both street network conditions assuming

ramps closed and ramps open (see Table 6, p. 94). Descriptions of level of service (LOS) are given in Tables D-2 and D-3, Appendix D, pp. A.51-A.52.

Current Street Network (Ramps Closed). All four intersections surrounding the project block currently operate at LOS A during the p.m. peak-hour, as shown on the basis of a field survey conducted by Korve Engineering, Inc. on December 7, 1989. The majority of the traffic from the project block travels east on Clay Street, with the remainder of the project intersections receiving fairly equal amounts of traffic. A significant percentage of eastbound Clay Street traffic turns southbound on Battery Street with the Embarcadero Freeway closed. Project impacts during the peak periods at the intersection closest to the project site (Washington Street / Sansome Street) would result primarily from pedestrian traffic, service-vehicle traffic using the subsurface loading area, and from traffic using the proposed 100 on-site parking spaces. The peak-hour impacts shown in Table 6 reflect vehicle volumes generated by the 100 parking-space garage proposed by the project, because those would be certain to reach one or more of the four study intersections.

With the Clay Street and Washington Street ramps closed, the levels of traffic on Clay Street and Washington Street are greatly reduced, because drivers use alternative streets to reach the freeways (see Table 6). The Montgomery Street / Washington Street intersection would degrade from LOS A to LOS B with the addition of cumulative traffic, including the project, to the network and with no Embarcadero freeway replacement. The other three project intersections would remain at LOS A in 2000.

Embarcadero Replacement Network (Ramps Open). The volume-to-capacity ratios at project intersections would increase as a result of cumulative development including the proposed project, more so with a replacement for the Embarcadero Freeway. With a reopening of an Embarcadero access, the LOS at the Washington Street / Montgomery Street / Columbus Avenue intersection would degrade to LOS D and at Sansome Street / Clay Street and Sansome Street / Washington Street would degrade to LOS B. These LOS are approximately what they were in 1982 and 1984, with the freeway operating./11/

Freeway Corridor Analysis

As discussed on p. 93 to 95, the project would contribute marginally to increases in traffic on the major freeways serving downtown San Francisco. Traffic generated by

TABLE 6: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS) /a/

	Existing		Existing w/Project		Cumulative with Embarcadero		Cumulative without Embarcadero	
	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
Sansome/Clay	A	0.39	A	0.39	B	0.63	A	0.42
Sansome/Washington	A	0.36	A	0.36	B	0.62	A	0.38
Washington/Montgomery	A	0.56	A	0.57	D	0.81	B	0.60
Montgomery/Clay	A	0.28	A	0.29	A	0.45	A	0.31

/a/ LOS descriptions and relationship to V/C ratios are shown in Table D-3, p. A.52 of Appendix D.
/b/ Based on traffic counts conducted by Korve Engineering, Inc., on December 7, 1989.

SOURCE: Korve Engineering, Inc.

TABLE 7: SIDEWALK PEDESTRIAN LOS ANALYSIS - NOON AND P.M. PEAK PERIODS

Location	Peak Period	Existing Flow Regime	Existing with Project Flow Regime
Montgomery Street @ Main Entrance	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Washington Street @ Park Entrance	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Sansome Street @ Mark Twain Alley	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Clay Street @ Park Entrance	Noon	Unimpeded	Unimpeded
	P.M.	Open	Unimpeded

SOURCE: Korve Engineering, Inc.

the project itself would increase total traffic on major freeways during the p.m. peak period and the p.m. peak hour by about 0.1% or less. Such increases would not be measurable against the day-to-day fluctuations in traffic volumes. Because the Bay Bridge p.m. peak-hour eastbound traffic flow is functionally at capacity, the travel demand from the project would not be expected to increase the flows on the Bay Bridge in the peak-hour; rather, the East Bay-bound auto traffic from the project would most likely compete with and delay existing users of the Bay Bridge into later portions of the peak period. This competition for access would occur at the on-ramps to the Bay Bridge and any delay to existing users to later time periods would depend on the time of arrival of project vehicles at the on-ramps. Some drivers would shift to carpools or transit as a result of cumulative displacement.

Pedestrian Movements

The primary entrance to the building would be on Sansome St., with secondary access on Washington Street and Mark Twain Alley. These would provide access to open space areas (Mark Twain Alley pedestrian mall and Redwood Park) and the lobby, where elevators serving upper office floors would be located. Entrances to ground-floor retail space would also be located off Redwood Park.

Tables 7, p. 94, and 8, p. 96, summarize pedestrian flow conditions on sidewalks and crosswalks, respectively, adjacent to the project block. Operating conditions on sidewalks and crosswalks have been evaluated in terms of pedestrian flow categories or regimes, which relate the density of pedestrians in a specific time period (pedestrians per foot of clear sidewalk width per minute) to the quality of pedestrian flow (the difficulty of maintaining walking paths and speeds on a sidewalk). See Appendix D, Table D-4, p. A.53, for an explanation of pedestrian flow rates and LOS. Figure D-2, pp. A.54-A.55, shows photographs of sidewalk conditions for each flow regime. These sidewalks and crosswalks currently operate in no worse than an unimpeded condition during both the noon-peak-15-minute period and the p.m.-peak-15-minute period./12/

The project at full occupancy would generate about 117 new pedestrian trips on sidewalks and crosswalks in the vicinity of the site during the 15-minute peak-period of the noon hour, and about 120 new pedestrian trips during the p.m. 15-minute peak-period in the p.m. peak. Pedestrian regimes for cumulative conditions are identical are to those shown for "Existing plus Project".

TABLE 8: CROSSWALK PEDESTRIAN LOS ANALYSIS - NOON AND P.M. PEAK PERIODS

Location	Peak Period	Existing Flow Regime	Existing w/Project Flow Regime
Across Washington Street @ Montgomery Street East Side	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Across Montgomery Street @ Washington Street South Side	Noon	Unimpeded	Unimpeded
	P.M.	Open	Open
Across Washington Street @ Sansome Street West Side	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Across Sansome Street @ Washington Street South Side	Noon	Unimpeded	Unimpeded
	P.M.	Open	Open
Across Sansome Street @ Clay Street North Side	Noon	Unimpeded	Unimpeded
	P.M.	Open/Unimp.	Unimpeded
Across Clay Street @ Sansome Street West Side	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Across Clay Street @ Montgomery Street East Side	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded
Across Montgomery Street @ Clay Street North Side	Noon	Unimpeded	Unimpeded
	P.M.	Unimpeded	Unimpeded

SOURCE: Korve Engineering, Inc.

In the year 2000, during the noon 15-minute peak, the sidewalks and crosswalks on, and adjacent to, the project block would remain in unimpeded conditions, as with existing conditions (see Table 8). The project pedestrian traffic would represent about 15% of the pedestrian volumes on the sidewalks and about 20% of the pedestrian volumes on the crosswalks during the noon hour.

The p.m. 15-minute peak operations in the year 2000 would continue to be in the unimpeded range on sidewalks and crosswalks in the project vicinity, except for the Clay Street sidewalk, which would go from open to unimpeded; the Sansome Street (at Clay Street) crosswalk, which would go from open/unimpeded to unimpeded; and the Montgomery Street (at Washington Street) and Sansome Street (at Washington Street) crosswalks, which would continue to be open. Project pedestrian traffic during the p.m. peak 15-minute period would represent about 20% of the pedestrian volumes on the sidewalks adjacent to the site, about 18% of the pedestrian volumes on the nearest crosswalks. There would continue to be adequate sidewalk and crosswalk widths for pedestrians (see discussion above and Table D-4, Appendix D, p. A.53).

The project would have a 25-ft. curb-cut on Sansome Street for the ramp leading to the project parking garage and the two subsurface off-street loading docks. This would increase the potential for vehicle/pedestrian conflicts along the Sansome Street sidewalk.

OFF-STREET PARKING AND LOADING REQUIREMENTS AND DEMAND

Parking

Parking demand was calculated for the Transamerica III project on the basis of the square footages of space by use in the new building. Space leased to tenants in late 1989 was excluded from calculations of net demand. The proposed project would create long-term parking demand for about 65 spaces (including 7 carpool / vanpool spaces) and short-term parking demand for 15 equivalent daily spaces, for a total parking demand of 80 daily spaces. Discounting for parking demand generated by existing uses on the site, the net additional parking demand generated by the proposed project would be about 60 spaces. The proposed project would provide about 21,500 gsf of parking area, which could accommodate about 100 vehicles with tandem valet operations based on Department of City Planning parking standards./13/ Assuming the Transamerica III garage would also provide parking for Transamerica II, the additional parking demand would be 110 daily parking spaces (90 long-term spaces and 20 short-term spaces), for a total demand for 190 parking spaces with the two buildings using the garage. The total calculated demand would be 90 spaces in excess of the 100 supplied by the project. Parking demand from Transamerica II dispersed to other parking garages including the Pyramid garage; some of that demand would return to the Transamerica block to occupy the Transamerica III garage. No parking is now available on the project site. Parking is available at the nearby Pyramid garage, which contains approximately 107,700 sq. ft.

of parking area operated as 277 parking spaces. Using Department of City Planning standards the Pyramid garage could accommodate about 500 vehicles with tandem-valet operations. Parking demand calculations are presented in Appendix D, Table D-5, p. A.56.

The proposed project would not eliminate any existing parking spaces available to the general public, resulting in a total oversupply of about 20 equivalent daily spaces [total project demand (80) plus displaced public parking (0) minus proposed parking capacity (100) equals 20 spaces total oversupply]. Occupancy in off-street public parking lots and garages within a ¼-mile radius of the project's site would not be expected to increase, because of the oversupply of parking generated by the project, assuming no changes in travel modal splits./14/ The surplus would help to offset the parking deficit created when Transamerica II was built without any parking.

The proposed project is in the C-3-O District, in which off-street parking is not required for commercial uses. The *City Planning Code* allows accessory parking using up to seven percent of the gross floor area of the project. The 21,500 gross square feet of parking proposed by the project sponsor would exceed this seven percent allowed (135,775 total project gsf x 0.07 = 9,504 gsf allowable for accessory parking). The proposed project would be required as a condition of approval to allocate at least 15 spaces for public short-term parking, and at least 7 spaces for carpools and vanpools, based on the proposal to provide 100 spaces in the garage and projected demands for these specially designated spaces. The remaining 78 spaces could be used for short-term or long-term parking.

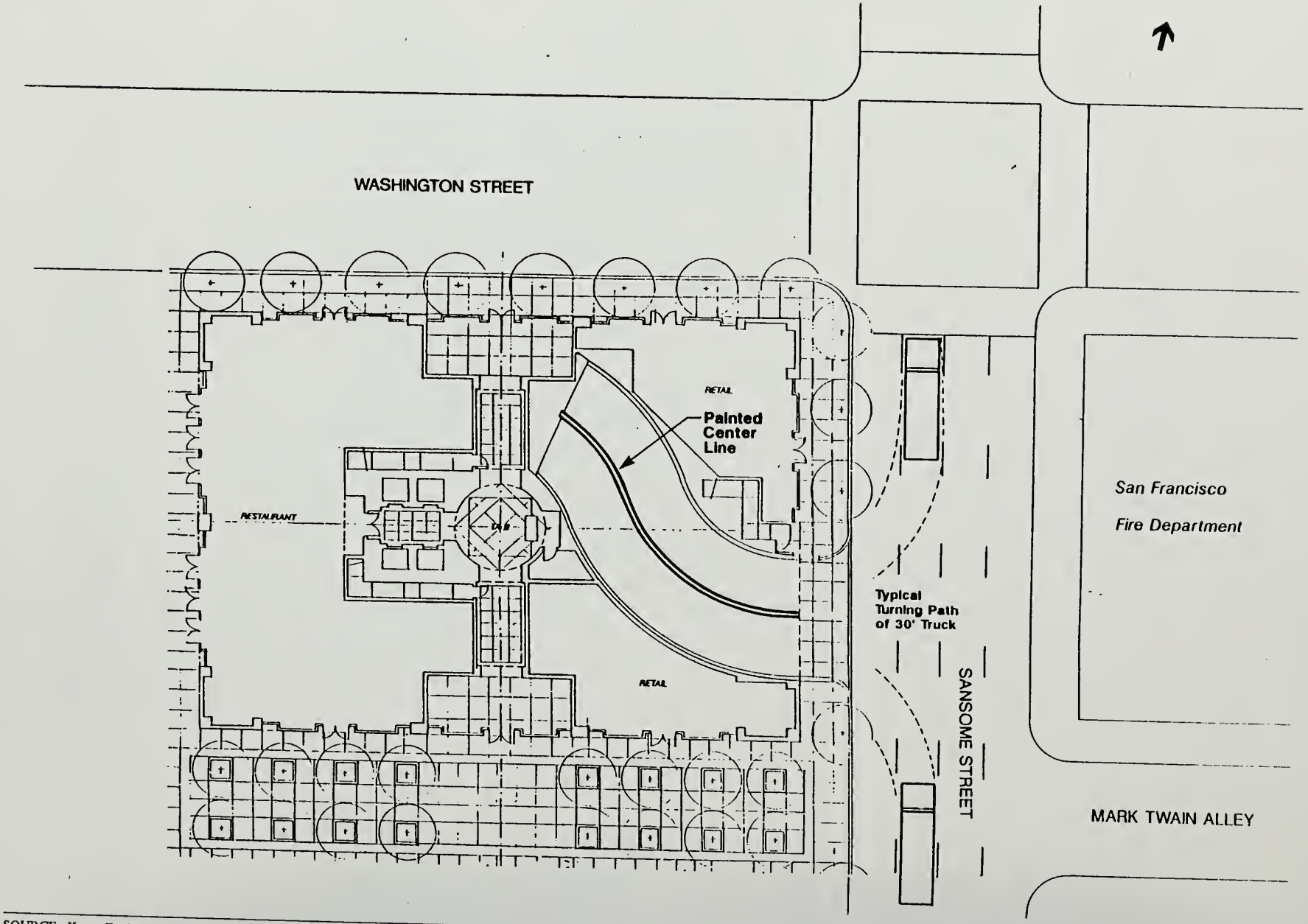
Parking provided in the proposed project for public use would be subject to a rate structure (*City Planning Code* Section 155(g)), which encourages short-term use and discourages all day parking, thus providing an oversupply of short-term spaces compared to calculated demand, and pursuant to the *Master Plan*, discouraging long-term parking. Employees in the new building who commute by car, creating long-term parking demand, might not use space in the building because of the short-term parking rate. This long-term parking demand could be satisfied in the existing parking garage under the Transamerica Pyramid. This garage averages 277 parkers; based on square footage, it could accommodate about 500 vehicles with tandem-valet parking. This garage has no requirement to set fees to discourage long-term parking. Therefore, the project would not automatically add to long-term parking demand in the area.

Loading

Transamerica II has approximately 20 feet of loading dock area at street level on the north side of the building, with access via Mark Twain Alley. This loading area is difficult to access because of the backing maneuvers required and the presence of pedestrians along Mark Twain Alley. The project would close this loading area as part of the improvements to the Mark Twain Alley pedestrian area.

Under the *City Planning Code*, the project would be required to provide one loading dock to serve the 136,000 sq. ft. of office space (0.1 space per 10,000 gsf = 1.4 or one space for 136,000 sq. ft. of office space). Two full-size truck loading spaces would be located in the subsurface project garage accessible from Sansome Street (see Figure 20). One of these spaces would be the project's required space. The other space would replace the at-grade loading dock serving Transamerica II from Mark Twain Alley. The project would satisfy the *City Planning Code* requirement for provision of loading docks. Based upon data published in *Center City Circulation Programs: Pedestrian Circulation and Goods Movement*, the new building would generate about 30 service vehicle stops per day and Transamerica II would generate about 42 service vehicle stops per day, for a total of 72 service vehicle stops per day./15/ Average hourly loading space needs are given in terms of spaces per hour per 10,000 gsf of building space; average demand from both buildings would be about 3.3 spaces per hour and peak demand would be about 4.2 spaces per hour. Average demand would be about 1.3 spaces per hour more than supply or *City Planning Code* requirements. Peak demand would be about 2.2 spaces per hour more than supply or *City Planning Code* requirements. On occasions when more than two trucks attempt to use the loading area, on-street double-parking would occur on Sansome Street. To lessen the probability of truck double-parking, the project sponsor would designate two of the tandem-vale spaces in the Tranamerican III garage for use by small delivery vehicles, such as automobiles, light trucks or vans (see Mitigation Measures pp. 116 to 117). This could affect Muni operations on that street. Use of the loading spaces in the project garage by van/UPS-type vehicles would require adequate vertical clearance and signs or personnel to indicate clearly the availability of basement loading spaces; otherwise, double parking by these vehicles would also occur.

Analysis of the design of the proposed subsurface loading/service area indicates that standard single-unit trucks would be able to enter the loading area by driving in from a



SOURCE: Korve Engineering, Inc.

Transamerica III ■

Figure 20
Proposed Transamerica III
Garage Access

northbound position on Sansome Street and completing all maneuvering inside the building, as required by Department of Public Works standards.

DEMOLITION, EXCAVATION, AND CONSTRUCTION TRAFFIC /13/

During the projected construction period of approximately 24 months, transportation impacts would result from truck movements to and from the site during demolition, excavation, and construction activity. Demolition and excavation would require about five months. These activities would generate an average of approximately 40 to 60 truck movements per day in or out of the project site during demolition and excavation. The time period for offhaul would be from 6:00 - 6:30 a.m. to 3:30 - 4:00 p.m. Offhaul disposal would most likely be in Richmond or another East Bay location. Access into the immediate building site would occur via both Washington Street and Sansome Street. Without a reopening or replacement of the Embarcadero freeway, access to the East Bay would most likely occur from either Washington to Montgomery to Clay to Battery Streets to I-80 or Sansome to Jackson to Battery Streets to I-80. Construction activities (steel erection and finishing) would generate an average of about 20 to 40 truck movements per day during the remaining 19-month construction period. Deliveries of materials would occur before 7:00 a.m., after 6:00 p.m., or between 9:00 a.m. and 3:30 p.m.

Construction truck access to the immediate building site would be via Sansome and Washington Streets. The west sidewalk on Sansome Street and the south sidewalk on Washington Street fronting the project site would be closed for the 24-month construction period. A sidewalk barricade would be constructed in the parking lane along both streets for pedestrians. The parking lane along Sansome Street and along Washington Street for the length of the site frontage would be closed for the duration of construction. Closure of the curb lanes during project construction would result in the loss of about seven parking spaces and a reduction of street capacity.

The impact of construction truck traffic would be a lessening of the capacities of access streets and haul routes because of the slower movements and larger turning radii of trucks. The reduction in capacity would slow movement of traffic, including Muni buses, along haul routes. Lane blockage on Washington Street by queued trucks, if it were to occur, would reduce the capacity of that street and interfere with the operation of transit vehicles, Muni lines that could be affected include lines 30X, 41, and 42. Lane

and sidewalk closures are subject to review and approval by the Department of Public Works and Muni.

Materials storage is proposed to be off-site, and would generate construction vehicle trips to the site; those trips are included in the above projections. Temporary parking demand from construction workers' vehicles, and impacts on local intersections from construction workers' traffic, would occur in proportion to the number of construction workers who would use automobiles. Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would coincide with peak-hour traffic, and would serve to worsen service levels. As noted above, truck traffic would be restricted to the hours of 9:00 a.m. to 3:30 p.m., or possibly before 7:00 a.m. or after 6:00 p.m., to avoid such peak-period effects.

Additional developments in the immediate project vicinity are in different stages of environmental review, project approval or construction. Pan Magna Plaza (Phases I and II) is approved, the 600 California Street building is nearing completion, and the 475 Sansome Street building is undergoing renovation. Some phases of other developments' construction could overlap with the project's construction period. In the event of combined construction periods of the proposed project and one or more of these other projects, construction truck traffic would be expected to increase further, and traffic congestion and transit delays could worsen beyond the conditions described above. Should one project be completed and a second begin soon after, construction truck traffic impacts would be prolonged, but would not likely be further degraded.

NOTES - Transportation

/1/ This general information is based on impact analysis carried out in the *I-280 Transfer Concept EIR*, 84.385E, May 23, 1985, which examined different surface route alternatives along The Embarcadero right-of-way. Any new roadway designs proposed for The Embarcadero would be subject to additional, separate environmental review.

/2/ San Francisco Department of City Planning, *Transportation Guidelines for Environmental Impact Review: Transportation Impacts*, September 1983. This document describes the procedure used to calculate travel demand from the project. Daily trip generation rates of 18.1 person trip-ends (pte) per 1,000 gross sq. ft. of office space and 150 pte per 1,000 gross sq. ft. of retail space were used to generate travel from the project. The two trip generation rates are for independent land uses. When used to generate travel from more than one land use on the same site the rates may overestimate total travel to the site since a portion of the travel from each of the land uses may occur between land uses on the site and not leave the site. Such trips are referred to as "linked trips." The calculations for this project have not been discounted to account for linked trips and thus present a "worst-case" scenario.

/3/ Deduction of existing travel demand is per the *Transportation Guidelines*.

/4/ San Francisco Department of City Planning, Office of Environmental Review, *The Mission Bay Environmental Impact Report* (86.505E), Vol. II, pp. VI.E.71-78. This document is an analysis of projected growth in the Downtown & Vicinity to the years 2000 and 2020. The transportation analysis in the EIR includes projections of future modal splits for work and other (non-work) travel for the p.m. peak-period and peak-hour time periods.

/5/ This deficit-per-ride figure is based upon information provided by a recent Muni cost analysis constructed by PUC staff and consultants, showing that the appropriate figure for fiscal year 84-85 was approximately $0.28 per additional Muni trip taken at peak service hours. With the updated figure, the annual cost deficit to Muni would be $18,346. Leonard Tom, Administrator, Transit Impact Development Fee, San Francisco Public Utilities Commission, letter, January 7, 1989.

/6/ According to Muni, the appropriate technique for determining the costs to Muni of cumulative development is an average cost analysis which would include both capital and operating costs. Application of this technique, however, is limited because relevant capital cost data are not available from Muni. Further, capital costs are difficult to allocate on a person-trip basis, as capital expenditures occur from time to time in large amounts, not necessarily annually. The established method of allocating capital costs is through depreciation, which is based on historical depreciation costs, not replacement costs. Such an estimate would be low in comparison with the costs of new capital improvements required for a single passenger trip. The use of existing capital cost data would underestimate future capital cost needs. Existing Muni accounting statistics do not enable future capital costs to be calculated on a per-passenger-trip basis (Bruce Bernhard, Muni Chief Financial Analyst, telephone conversation, March 25, 1985).

/7/ This conclusion should be qualified because the Muni deficit-per-passenger-trip figure is based on 1984-85 data, and because the total project-generated deficit is calculated only for those riders who use Muni as their primary mode of transportation, excluding riders who would use a combination of transportation carriers, such as Muni and CalTrain. More recent data that would allow a more precise estimate of costs are not available. The deficit due to the project would be: 260 peak-period trips per day x 252 working days per year x $0.28 deficit = $18,346. The cost deficit estimate is based on the assumption that essentially all vehicles are operating at capacity during peak periods and additional riders would require new vehicle trips. It was assumed that during off-peak periods, all vehicles operate with excess capacity, resulting in an average off-peak marginal cost of zero. These cost estimates are appropriate for project costs to Muni of a single office building. Assessments of costs that would result from cumulative development require the inclusion of additional cost factors and may be best projected using average cost data. Muni does not have data that would enable it to estimate the average cost per passenger trip. It is reasonable to conclude that average costs would be significantly higher than marginal costs.

/8/ Ward Belding, Supervisor, Office of Research, BART, telephone conversation, September 27, 1985. The $1.20 average deficit per trip is based on all operating costs and revenues for the entire system and is not specific to San Francisco trips. Available data from BART do not enable peak and non-peak periods costs to be differentiated.

/9/ 486 BART trips per day x 252 days/year x $1.20 = $146,970.

/10/ Project intersection counts were made by Korve Engineering on December, 7, 1989 during the p.m. peak period. Those counts represent post-quake (Embarcadero closed) conditions.

/11/ As a sensitivity check for the trip generation methodology, the p.m. peak hour LOS were compared to those in earlier EIRs. In the *Montgomery-Washington Tower EIR*, EE 81.104E, certified January 28, 1982, LOS D and 0.82 volume-to-capacity ratio (V/C) conditions were listed for the intersection of Washington Street and Montgomery Street. In the *Montgomery-Washington Tower Supplemental EIR*, EE 81.104E, certified December 6, 1984, LOS C and 0.73 V/C conditions were given for the Montgomery Street/Clay Street intersection.

/12/ Pedestrian counts were made by Korve Engineering, Inc., January 17, 18 and 23, 1990, during the noon (11:30 a.m. to 1:30 p.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak periods.

/13/ Using the Department of City Planning's standard of about 215 gross square feet per vehicle for tandem valet parking in downtown San Francisco, per May 4, 1989 memorandum, Dean L. Macris to City Planning Commission.

/14/ This reflects the actual vehicular capacity of the existing lots at any time, as currently operated as self-park, and not the total number of vehicles or individuals who may use the facility. For long-term parking, it is recognized that leasing operations often "oversubscribe" parking facilities, selling more leases than the number of vehicles the facility can accommodate at one time, to take care of non-daily users who still wish a long-term lease, and those who are in-and-out during the course of the day. As a result a greater number of parking leases or users may be displaced than the actual vehicular capacity of the facility.

/15/ San Francisco Department of City Planning, *Center City Pedestrian Circulation and Goods Movement*, Working Papers 1, 2, and 3, and Final Report, 1980.

/16/ This section was prepared on the basis of estimates of construction periods, truck movements and access routes provided by Jeff Lindell, Project Manager, Dinwiddie Construction Company, letter to Dennis Struecker, Korve Engineering, Inc., November 1990.

G. CUMULATIVE AIR QUALITY

The Mission Bay and South of Market Plan EIRs analyzed cumulative effects of development in the Downtown & Vicinity on regional air quality in the future. This material is incorporated by reference and summarized here. The analyses in those EIRs describe the continued failure of the Bay Area to attain federal ozone and carbon monoxide standards, a problem to which the project would contribute. (For more detail on air pollutant emissions and their impacts, see *Mission Bay EIR*, Vol. II, pp. VI.F.13-18.)

Motor vehicle exhaust emissions would continue to be the primary source of air pollutants in the Downtown & Vicinity. These emissions would affect local and regional air quality. Ozone and carbon monoxide concentrations occasionally violate air quality standards at some locations in the Bay Area. Emissions of hydrocarbons and nitrogen dioxide, precursors of ozone, would contribute to regional ozone concentrations. Emissions would also add to carbon monoxide concentrations at congested intersections.

Computer modeling of cumulative carbon monoxide concentrations at eight congested intersections analyzed in the *Mission Bay EIR* (five of which are intersections adjacent to freeway ramps) suggests that prior to the Loma Prieta earthquake, state and federal standards for eight-hour average concentrations (9 parts per million [ppm]) were violated on occasion at the intersection of Sixth and Brannan Streets (13.4 ppm) and at the intersection of Third and Berry Streets (9.2 ppm). With the temporary closure of I-280 for repairs, these two intersections are not currently congested; both the normal traffic and the resulting air quality effects have been dispersed to other intersections.

When I-280 is re-opened, traffic at the study intersections is expected to return to pre-quake levels, resulting in air quality similar to pre-quake conditions. None of the eight intersections violate state or federal one-hour standards (20 ppm and 35 ppm, respectively). Carbon monoxide concentrations are expected to improve throughout the region due primarily to better vehicle emission controls. Carbon monoxide concentrations at the eight intersections, even with Mission Bay and cumulative growth in traffic, are projected to decrease. No violations of state or federal carbon monoxide standards are expected at those intersections in 2000 (or at buildout of Mission Bay in 2020). (For more detail on intersection carbon monoxide concentrations in the South of Market area, see *Mission Bay EIR*, Volume II, pp. VI.F.9-10 and 17-18, and Table VI.F.4, p. VI.F.19; *South of Market Plan EIR* pp. 140-142 and Table 10, p. 143).

The *1982 Bay Area Air Quality Plan (1982 Plan)* established schedules and strategies to comply with federal ozone and carbon monoxide standards established under the Clean Air Act by December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and carbon monoxide (standards are occasionally violated). The U.S. Environmental Protection Agency (EPA) has required that the *1982 Plan* be updated by 1991.

Effective January 1, 1989, the California Clean Air Act provides for the designation of districts into three classes: moderate (defined as an area which can attain state and federal air quality standards by December 31, 1994), serious (areas which can attain the standards by December 31, 1997), and severe (areas that cannot specify an attainment date). In each case, the Act specifies strategies that must be adopted. In all cases, plans are required to demonstrate a five percent per year reduction in the emissions of pollutants or precursors, unless the California Air Resources Board (ARB) determines that all feasible measures are being employed. BAAQMD is in the process of determining the Bay Area's status./1/

NOTE - Air Quality

/1/ Patrick Navis, California Air Resources Board Liaison to the Bay Area Air Quality Management District, California Air Resources Board, telephone conversation, January 8, 1991.

H. SEISMICITY

The primary seismic hazard at the site is strong ground shaking resulting from earthquakes on nearby faults. During the 1906 earthquake, estimated to be 8.3 on

the Richter scale, strong ground shaking was documented near the project site. The October 17, 1989 Loma Prieta earthquake at 7.1 on the Richter scale caused some damage to older structures near the project site.

The project area would experience Very Strong Groundshaking (Intensity Level C, masonry badly cracked with occasional collapse; frame buildings lurched when on weak underpinning with occasional collapse) during a major earthquake./1/ The building would be required to meet current seismic engineering standards of the San Francisco Building Code. (See mitigation measures for the project's emergency response plan, pp. 119 to 120). The project would replace buildings on the site built prior to current seismic code standards, and generally more susceptible to earthquake damage.

The building would be designed and constructed to be earthquake-resistant in accordance with applicable codes. New buildings are required by the 1990 San Francisco Building Code to be sufficiently earthquake-resistant to provide reasonable assurance that damage to the building would not be life / safety threatening. Before a building permit would be issued by the Bureau of Building Inspection (BBI), the BBI would review the design of the building to determine whether or not the design complied with code. Before an occupancy permit would be issued by the BBI, the BBI would inspect the building to ascertain if the building has been built according to plan and complying with code.

NOTE - Seismicity

/1/ Blume, John A., San Francisco Seismic Safety Investigation, Geologic Evaluation, URS Associates, 1974.

I. CONSTRUCTION NOISE

Noise in the project vicinity is typical of noise levels in downtown San Francisco, which is dominated by vehicular traffic, including trucks, cars, Muni buses and emergency vehicles. The Downtown Plan EIR indicates a day-night average noise level (L_{dn}) in 1984 of 72 dBA on Sansome Street and the Environmental Protection Element of the *Master Plan* indicates a (L_{dn}) of 65 dBA on Washington Street in 1974./1,2,3/

Project construction would take about 18 to 24 months, and would increase noise levels in surrounding areas. Construction noise levels would fluctuate depending on

construction phase, equipment type and duration of use, distance between noise source and listener. To estimate probable noise impacts, this analysis assumes typical equipment and construction techniques. Table 9 shows typical exterior noise levels associated with the different phases of construction. Interior noise levels at 50 ft. from the noise source would be about 10 to 15 dBA less than those shown in Table 9. Closed windows would reduce noise levels by about 20 to 25 dBA below those shown in the table.

Construction noise is regulated by the *San Francisco Noise Ordinance* (Article 29 of the *City Police Code*). The ordinance requires that sound levels of construction equipment other than impact tools not exceed 80 dBA at a distance of 100 ft. from the source. Impact tools (jackhammers, piledrivers, impact wrenches) must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. Section 2908 of the Ordinance prohibits construction work at night, from 8:00 p.m. to 7:00 a.m., if noise would exceed the ambient noise level by five dBA at the project property line, unless a special permit is authorized by the Director of Public Works.

The project would require piledriving. Piledriving would occur intermittently over about seven weeks; hammering would occur during a five- to eight-minute period for each pile. Conventional unmuffled and unshielded pile drivers emit noise levels of 100 to 110 dBA at a distance of 100 ft. each time the driver strikes the pile. The Department of Public Works allows piledriving operation under certain conditions, which may include specifying relatively quiet equipment, predrilling pile holes, and/or specifying hours of operation to reduce the number of people exposed to noise effects.

Land uses surrounding the project site include residential uses in the upper floors at the 24-story Montgomery-Washington Tower one block to the west and at the 21-story Golden Gateway complex about two blocks to the east, residential uses above retail uses in small buildings on Jackson Street and Kearny Street about two blocks to the west and nearby commercial uses on ground floors, upper story offices, and parking structures. Thus, if piledriving were to occur during the evening or nighttime hours, residents of Montgomery-Washington Tower and Golden Gateway would be affected. If piledriving were to occur during daytime hours, employees and other occupants of the adjacent commercial and office uses would be affected.

At the Transamerica Pyramid and Transamerica II buildings immediately adjacent to the site, interior noise levels during piledriving could reach 90 dBA with windows

TABLE 9: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS, 50 FEET FROM SOURCE

Construction Phase	Duration of Phase/a/(weeks	Average Noise Level (dBA)
Ground clearing	4	84
Excavation	11	89
Foundations/b/	9	78
Erection	16	85
Exterior Finishing	48	89

/a/ Steve Weindel, Skidmore, Owings & Merrill, telephone conversation, October 26, 1990 and Mr. Jeff Lindell, Dinwiddie Construction Company, Project Manager. Excavation and foundation phases of construction would overlap.

/b/ Time includes three weeks of piledriving; noise level is for activities other than piledriving. Noise levels during piledriving could reach 105 dBA at 50 ft.from the source.

SOURCE: Bolt, Beranek and Newman, December 31, 1971, Noise from Construction Equipment and Home Appliances, Environmental Protection Agency.

closed. The noise levels experienced by occupants of these or other highrises in the project vicinity would depend on their distance (both horizontal and vertical) from the noise source. This distance, coupled with the attenuation of 15 to 20 dBA normally provided by the building envelope, would normally mitigate impacts on interior noise levels in nearby highrises, other than the Transamerica Pyramid and Transamerica II. Piledriving noise would, however, continue to be noticeable and annoying to many people.

San Francisco Fire Department Station No. 13, approximately 50 ft. from the project's eastern boundary, would experience noise levels of about 85 dBA during piledriving with windows closed and about 100 dBA with windows open. Commercial uses across Washington Street, approximately 100 ft. from the project's northern boundary would experience noise levels of about 79 dBA with windows closed and 94 dBA with windows open during piledriving. This noise level would result in occupants having to shout to communicate and would make telephone conversations difficult. These noise levels would require windows to be closed and would normally require noise barriers to be erected between the construction noise source and the receptor, to allow normal conversation.

The Montgomery-Washington Tower would experience noise levels of approximately 60 dBA with windows closed and 75 dBA with windows open during piledriving. This would result in occupants having to close windows in order to communicate, concentrate or rest. To prevent interior noise levels (with windows closed) at nearby residences from exceeding the State standard of 45 dBA during construction activities, noise barriers would normally need to be erected between those residential uses and the construction site.

Vibrations, resulting from the impact of the driver with the pile could be transmitted through the soil to older buildings in Jackson Square, possibly causing deterioration of the structures. Further study of the site vicinity soils and structures would be needed to determine precisely the effectiveness of the soil in transmitting vibrations; however, it is possible to mitigate vibration effects by reducing the amount and duration of piledriving. During the 1981 construction of the eight-story Pacific Lumber Company building at Washington Street and Sansome Street (between the project site and Jackson Square), vibration impacts were successfully mitigated by a program of pre-drilling holes for piles and monitoring construction effects./4/

Vibrations from the impact during piledriving would be felt in adjacent and nearby buildings. These vibrations have been found to be more disturbing to some people than high noise levels. General stress reaction has been observed in humans exposed to brief sounds of 75 dBA./5/ Noise at levels greater than 60 dBA can interfere with normal speech and concentration, noise levels greater than 70 dBA would require workers to close windows or shout to communicate. At noise levels of 85 dBA, normal conversation is extremely difficult, and sleep or rest virtually impossible. Intermittent noises, such as piledriving noise, reduce perception of control over the environment. This perceived loss of control frequently results in a depressed mood and depressed motivation. It has also been shown that high noise levels can lead to elevated blood pressure./6/ Repeated impulse and intermittent sounds of high level appear more likely to disrupt performance than continuous or steady sounds of comparable level./7/

The U.S. Environmental Protection Agency (EPA) has determined that noise levels of 70 dBA, L_{eq} over a 24-hour day, assuming a 40-year exposure period, are the maximum level at which conservation of hearing is ensured for virtually all of the population./8,9/ Assuming that actual piledriving would occur for about 45 minutes per day, the maximum suggested non-occupational noise exposure level would be about

93 dBA, L_{eq}./10/ This noise level would be 3 dBA greater than the maximum noise levels expected during piledriving adjacent to the project site with windows closed.

Noise generated during piledriving could be reduced by erecting barriers around the project site. Barriers may include such items as berms, walls, etc., that would affect sound propagation by interrupting it and creating an "acoustic shadow zone." The more solid, high and wide a noise barrier were, the more effectively it would attenuate noise. A wall may provide maximum noise reductions up to 20 dBA, while a berm may reduce noise levels a maximum of 23 dBA./11/ However, berms, walls and other noise barriers are only effective where they block the "line of site" path between the noise source and the receiver. Therefore, noise walls would not mitigate noise levels on upper stories of buildings (as discussed above, vertical distance and building envelope mitigate noise levels in highrises). Noise barriers are effective at mitigating noise inside business and retail entrances on the ground level, which by their nature, have front doors which are often open and have pedestrians walking near the site.

The project sponsor would require that the construction contractor limit pile-driving activity to result in the least disturbance to neighboring uses, and would consult with the Public Works Department to determine the least disruptive time for pile driving. Pile holes would be predrilled which would reduce the duration of pounding for each pile and any consequent effects. These measures, included as part of the project to reduce construction noise and vibrations, are listed in the Mitigation Measures on p. 118.

Additional development in the immediate project vicinity is in different stages of environmental review, project approval or construction: Pan Magna Plaza (Phases I and II) is approved but not yet under construction, 600 California Street and 343 Sansome Street are near completion, and 475 Sansome Street building is under renovation. Should any of these projects' construction schedules coincide with the proposed project, noise levels would be expected to increase by two to five dBA. This increase would be audible (depending on the loudness of the activity) and would probably be annoying because noise from construction of one project would be annoying to the nearest receptor (those within 100 ft.). Should one project be completed and a second begin soon after, noise impacts would be prolonged.

In summary, during the majority of construction activity, noise levels would be expected to be above existing levels in the area. There would be times, particularly during the operation of piledrivers or impact wrenches, when noise would interfere with indoor activities in nearby offices and retail stores.

NOTES - Construction Noise

/1/ A decibel (db) is a logarithmic unit of sound energy intensity. Sound waves traveling outward from a source exert a force known as the sound pressure level (commonly called "sound level), measured in decibels. A dBA is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.

/2/ L_{dn}, the day-night average noise level measurement , is based on human reaction to cumulative noise exposure over a 24-hour period and takes into account the greater annoyance of nighttime noises. Noise between 10:00 p.m. and 7:00 a.m. is weighted 10 dBA higher than daytime noise.

/3/ Department of City Planning, *Downtown Plan Environmental Impact Report* (EIR), EE81.3, certified October 18, 1984, Vol. 1, pp. IV.J.1-19, particularly Table IV.J.2, pp. IV.J.9-10.

/4/ Patel, Dipak, Cygna Engineering, telephone conversation with Thomas Pokorski, Vice President, Transamerica Realty Services, Inc., April 3, 1990.

/5/ The Central Institute for the Deaf, *Effects of Noise on People*, U.S. EPA, 1971.

/6/ Sheldon Cohen, et al., "Cardiovascular and Behavioral Effects of Community Noise," *American Scientist*, Vol. 69, Oct. 1981.

/7/ National Institute for Occupational Safety and Health, *Occupational Exposure to Noise*, U.S. Department of Health, Education, and Welfare, 1972.

/8/ U.S. Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety*, March 1974.

/9/ L_{eq} is the equivalent steady state that would, in a stated period of time, contain the same acoustic sound energy as the time-varying sound level during the same time period.

/10/ Cohen, A., J. Antioaglia, and H. H. Jones, "Sociocucsis -- Hearing Loss From Non-occupational Noise Exposure," *Sound and Vibration* 4(11) 12-20, November 1970, in Cornett, C. L. and C. Hina, *Methods for Predicting Noise and Vibration Impacts*, January 31, 1979.

/11/ U.S. Department of Transportation, Federal Highway Administration, *Highway Noise*, December 1978.

J. GROWTH INDUCING IMPACTS

The project would include about 136,000 gsf of office space (a net increase of about 56,900 gsf) and approximately 8,600 gsf of retail space (a net increase of about 4,550 gsf). Based on square-footages of existing space leased to tenants in late 1989, an estimated 98 persons would have been employed at the project site, including about 84 office workers, 12 retail workers and 2 building maintenance and security

workers./1/ Office employment at the site would increase to about 510 people, including between 165 and 200 persons employed by Transamerica or its affiliates. At full operation, the project would accommodate about 550 workers on-site, comprising about 510 office workers, 25 retail workers and 15 building maintenance / security / parking workers./2/ Net increase in employment on the project site would be about 450 workers on site, comprising about 425 office workers, 15 retail workers, and 10 building maintenance / security / parking workers./1/ Occupants of the proposed project could include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. The increase in employment at the project site, therefore, would not necessarily represent employment that is new to San Francisco. If the project were fully leased, however, and the office space of the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco could increase by about 450 jobs due to the project./1/ Approximately 240 additional jobs would be supported indirectly in San Francisco through the multiplier effect./3/

If marketed successfully, the project, together with other planned office development, could have growth-inducing effects by demonstrating a continued market for office space in this area. Such a demand would reflect the trend of growth in the service sector and headquarters office activities and employment in San Francisco. Increases in downtown office space and employment would contribute to continued growth of local and regional markets for housing, goods, and services. These effects would be less extensive if the vacancy rate for office space were to rise. Should this occur, projected increases in downtown employment would be less and the growth in demand for goods, services and housing would be lower.

It is expected that some downtown workers, including some in the project, would want to live in San Francisco. Employment growth, however, would not be reflected directly in increases in demand for housing and city services to residents, as some new jobs would be held by individuals who already live and work in the City; or, who live in the City but previously either did not work or worked outside the City; or who live in surrounding communities and would not move as a result of a new job in San Francisco. New downtown workers would also increase demand for housing in other parts of the Bay Area.

Any net increase in employment downtown would increase the demand for retail goods and services in the area. The project would intensify this demand by increasing the

amount of employment on the site, thereby increasing demand for goods and services in the vicinity. Increases in employment downtown would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. In response, demand would increase for existing space and possibly for further new development.

The project would be built in a developed urban area, and no expansion to the municipal infrastructure not already under consideration would be required to accommodate new development and increased employment due to, or induced by, the project.

NOTES - Growth Inducement

/1/ The transportation analysis in this EIR follows Department of City Planning transportation analysis guidelines, that, for consistency with other analyses, bases existing trip generation at a project site on occupied floor area. The occupied floor area (as of late 1989) at the project site would, under DCP guidelines, accommodate about 100 employees; therefore, the transportation analysis in this EIR is based on a net increase of about 450 employees. The occupied office space, as of late 1989, housed about 50 employees for a net increase of about 500 employees with the project. That 50-employee difference in net new employment would not significantly alter any of the analytic conclusions reported in this EIR, including intersection levels of service, parking demand or pedestrian circulation. The 10% difference in net new employment would also be within the range of daily variations in traffic conditions.

/2/ Employment is calculated from the estimates of sq. ft. of building space from the project description. Based on C-3 District employment density factors from the San Francisco Department of City Planning, *Downtown Plan EIR*, EE81.3, Certified October 18, 1984 (268 sq. ft. per office employee, 350 sq. ft. per retail employee, and 12,500 sq. ft. per maintenance / security / parking employee).

/3/ Indirect employment projections are based on the *1982 Input-Output Model and Economic Multipliers for the San Francisco Bay Region*, Association of Bay Area Governments, 1988 Update. A multiplier of 1.45 was used for office jobs, 1.24 for retail jobs and 1/64 for maintenance jobs. The multipliers used were Type I multipliers plus 10% of the difference between the Type I and Type II employment multipliers contained in this model.

VI. MITIGATION MEASURES PROPOSED TO MINIMIZE POTENTIAL ADVERSE IMPACTS OF THE PROJECT.

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been, or would be, voluntarily adopted by the project sponsor or project architects and contractors and thus are proposed; some are under consideration. Implementation of some may be the responsibility of public agencies. Measures under consideration may be required by the City Planning Commission as conditions of project approval, if the project were to be approved. Each mitigation measure and its status are discussed below.

There are several items required by law which, would serve to mitigate impacts, and are summarized here for informational purposes. These measures include: no use of mirrored glass on the building to reduce glare, as per City Planning Commission Resolution 9212; creation of new housing associated with housing demand of employees generated by the project, pursuant to Section 313 of the *City Planning Code*; contribution of funds for transportation service per the Transit Impact Development Fee, Board of Supervisors Ordinance #224-81; contribution of funds to increase park space in C-3 districts pursuant to Section 139 of the *City Planning Code*; contribution of funds for provision of on-site building space for childcare facilities pursuant to Section 314 of the *City Planning Code*; provision of off-street bicycle storage pursuant to Section 155 of the *City Planning Code*; provision of transportation brokerage service to coordinate a transportation management program pursuant to Section 163 of the *City Planning Code*; priority use of off-street parking in the project for the physically handicapped, travellers in vanpools and carpools, and short-term trips, pursuant to Section 155 of the *City Planning Code*; provision of building directories and signs for service elevators, located in loading areas, pursuant to Section 155(f) of the *City Planning Code*; limitation of construction-related noise levels, pursuant to the San Francisco Noise Ordinance (Article 29 of the *San Francisco Police Code*, 1972); preparation of a Site Mitigation Plan in accordance with (Maher) Ordinance #253-86; consultation with and approval from the San Francisco Department of Public Works Industrial Waste Division if treated groundwater were to be discharged to the City sewer; handling and transportation of hazardous wastes done under manifest and restricted to persons with appropriate training and licensing; and observance of

federal and state OSHA safety requirements for hazardous waste sites including the hazardous waste site safety training requirements of 29 CFR 1910.120. Additional measures which are not required by legislation, but which would also serve to mitigate environmental impacts appear below.

Mitigation measures below preceded by an asterisk (*) are from the Initial Study (see Appendix A).

CULTURAL RESOURCES

MEASURES PROPOSED AS PART OF THE PROJECT

- Given the strong possibility of encountering the remains of cultural or historic artifacts within the project site, the sponsor would retain the services of an archaeologist. The Environmental Review Officer (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

  A pre-excavation testing program would be carried out. The program would be supervised by an archaeologist using a series of mechanical, exploratory borings, or other testing methods determined by the archaeologist to be appropriate. The archaeologist would supervise the testing at the site to determine the probability of finding cultural and historical remains. At the completion of the archaeological testing program, the archaeologist would submit a written report first and directly to the ERO, with a copy to the project sponsor, which describes the findings, assesses their significance and proposes appropriate recommendations for any additional procedures necessary for the mitigation of adverse impacts to cultural resources determined to be significant. If portions of the Niantic or other historic ship are found during testing or excavation, a maritime expert would also be retained.

  Following the pre-excavation testing program, an archaeologist would supervise a program of on-site monitoring during site excavation. The archaeologist would record observations in a permanent log. Should cultural or historic artifacts be found following commencement of excavation activities, the arcaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific mitigation measures, if necessary. The monitoring program, whether or not there are any finds of significance, would result in a written report to be submitted first and directly to the ERO, with a copy to the project sponsor.

  Excavation or contruction activities which might damage discovered cultural resources would be suspended for a total maximum of four weeks over the course of construction to permit inspection, recommendation and retrieval, if appropriate.

If cultural resources of potential significance are discovered, an appropriate security program would be implemented to prevent looting or destruction. Any discovered cultural artifact assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB, would be placed in an appropriate repository designated for such materials.

Copies of the draft reports prepared according to these mitigation measures would be sent first and directly to the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board for review. Following approval of the reports by the ERO and the President of LPAB, a report is to be sent to the California Archaeological Site Survey Office at Sonoma State University. The Office of Environmental Review shall receive three final copies of the final archaeological findings report.

TRANSPORTATION

MEASURES PROPOSED AS PART OF THE PROJECT

- A minimum of five secure, safe bicycle storage facilities would be provided as required by Section 155(j) of the *City Planning Code*.

- During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 3:30 p.m. or before 6:30 a.m. or after 7:00 p.m. to minimize peak-hour traffic conflicts and to accommodate queueing of Muni buses prior to the peak hours. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Department of Parking and Traffic, the Fire Department, Muni and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or which later become known.

- The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) would be done in such a way as to minimize interference with pedestrian traffic.

- Off-street parking spaces would be controlled to assure priority for vehicles driven by the physically handicapped, vehicles using spaces for short-term rather than all-day parking, and vanpool and carpool vehicles.

- The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for Muni trolley wires on the proposed building wherever necessary, or agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense.

- The parking driveway would include warning devices (lighted signs and noise-emitting devices) to alert pedestrians of vehicles exiting the structure.

- The project would install an emergency traffic signal to hold vehicles on the exit ramp to prevent interference with fire-station operations. The duration of the red period should be determined on the basis of on-site test run-time studies, but would normally not exceed 1.5 times the fire vehicle passage or clearance time. A 12-inch diameter lens would be used for the red indication. The control for signal activation would be with the existing fire-station system.

- The project exit ramp would be posted for left turns only onto Sansome Street.

- The project sponsor would request that the curb area on the west side of Sansome Street between the garage ramps and the Washington Street intersection would be a no-parking zone. The 60 feet of existing on-street parking would not be replaced.

- The project sponsor would ensure that valet parking would not hinder service-vehicle access to the basement.

- In order to alleviate potential delivery-truck double-parking that would result from having fewer loading spaces than calculated demand, the project sponsor would provide the equivalent of one additional loading space in the subsurface parking garage (Four tandem-valet parking spaces would be converted to two van-sized loading spaces, which according to the *City Planning Code*, would substitute for the one additional loadng space that would be needed to meet expected demand. The four parking spaces that would be lost constitute four percent of parking proposed by the project; the loss of these spaces would not significantly affect the transportation analysis.)

MEASURES THAT COULD BE IMPLEMENTED BY PUBLIC AGENCIES

- Coordinate work schedules of Pacific Gas and Electric Company and other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This should be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP). In-street utilities should be installed at the same time as the street is opened for construction of the project to minimize street disruption.

- The City could act on, or endorse the implementation of, transportation mitigations described in the *Mission Bay EIR* Vol. II, Section VI.E, Mitigation, pp. VI.E.214-VI.E.217 for the year 2000 and VI.E.224-VI.E.231 for 2020, and in the *South of Market Plan EIR*, pp. 189-194. The measures for the year 2000 include: constructing and maintaining rail rapid transit lines from downtown San Francisco to suburban corridors and major non-downtown centers in San Francisco; increasing funding for Vehicle Acquisition Plans for San Francisco and regional transit agencies to expand existing non-rail transit service; providing exclusive transit lanes on City streets and on freeways; reducing incentives to drive, by discouraging long-term parking; encouraging carpools, vanpools, and bicycle use; improving pedestrian circulation within downtown San Francisco; and providing transportation brokerage services. The *Mission Bay EIR* describes various types of measures to illustrate the magnitude of improvements needed to mitigate the impacts of regional growth in 2020.

  Some of the implementing actions would require approval by decision-makers outside the City and County of San Francisco; many of the measures would require action by City agencies other than the City Planning Commission, such as the San Francisco Public Utilities Commission and/or Board of Supervisors. All except such things as providing transportation brokers would require funding from, or approval by, MTC. These measures are system-wide measures that must be implemented by public agencies. Other than project-specific measures such as the relevant transportation mitigation measures described above as part of the project, or such measures as the Transit Impact Development Fee assessment required by San Francisco ordinance 224-81, which contribute indirectly to implementation of these system-wide measures, it is not appropriate to impose mitigation at system-wide levels on individual projects.

AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

*• The project sponsor would require the contractor to sprinkle demolition sites with water continuously during demolition activity; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling of motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

- It should be noted that measures required in Section 163 of the *City Planning Code* to implement a TSM program identified to mitigate traffic impacts would also mitigate air quality impacts.

CONSTRUCTION NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

*• As recommended by the Environmental Protection Element of the *San Francisco Master Plan*, an analysis of noise reduction measures would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features could include fixed windows and climate control.

- The project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.

- The project sponsor would consult with the Department of Public Works to determine the time when pile driving would cause the least disturbance to neighboring uses. The project sponsor would require that the construction contractor limit pile driving activity to result in least disturbance. This could require a work permit from the Director of Public Works pursuant to *San Francisco Noise Ordinance Section 2908*, if pile driving during daytime hours is determined to be less disruptive to neighboring uses.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

- The project sponsor would require the general contractor to construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as five dBA, and to locate stationary equipment in pit areas or excavated areas, as these areas would serve as noise barriers.

GEOLOGY / TOPOGRAPHY / HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

*• A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by a California-licensed civil, structural

or geotechnical engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project.

*• If the project were to include dewatering, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.

*• The project sponsor would require the general contractor to install and maintain sediment traps in local stormwater intakes during the construction period to reduce the amount of sediment entering the storm drain / sewer lines, if this were found necessary by the Industrial Waste Division of the Department of Public Works.

*• Should dewatering be necessary, the final soils report [to be submitted to the Bureau of Building Inspection (BBI) of the Department of Public Works (DPW) and the Landmarks Preservation Advisiory Board (LPAB)] would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey were recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the *Building Code*) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor the level of the water table and other instruments would be used to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt this settlement. The project sponsor would delay construction if necessary. Cost for the survey and any necessary repairs to service under the street would be borne by the project sponsor.

*• The final soils report would also recommend whether or not watering of piles of adjacent structures would be necessary. If it were found to be necessary to water adjacent piles, the project sponsor would ensure that the general contractor complied with recommendations of the soils report.

MEASURES UNDER CONSIDERATION BY PROJECT SPONSOR

• If dewatering is undertaken for the project, the groundwater level in the site vicinity would be monitored. If lowering of the groundwater table were to threaten wooden pile foundations, groundwater recharge would be used to stabilize the groundwater level.

WATER QUALITY

MEASURE PROPOSED AS PART OF THE PROJECT

• See the second and third measures under Geology / Topography / Hydrology, above, for mitigation proposed to prevent sediment from entering storm sewers.

HAZARDS

MEASURES PROPOSED AS PART OF THE PROJECT

*• An evacuation and emergency response plan would be developed by the project sponsor of building management staff, in consultation with the Mayor's Office

of Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

*• To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

VII. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with Section 21067 of the California Environmental Quality Act (CEQA), and with Section 15040, 15081 and 15082 of the State CEQA Guidelines, the purpose of this chapter is to identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or by other mitigation measures that could be implemented, as described in Chapter V., Mitigation Measures, pp. 114 to 120.

The findings of significant impacts are subject to final determination by the City Planning Commission as part of its certification process for the EIR. This Chapter in the Final EIR will be revised, if necessary, to reflect the City Planning Commission's findings.

Cumulative development in downtown San Francisco would have a significant effect on the environment in that it would generate cumulative traffic increases as well as cumulative passenger loadings on Muni, BART and other regional transit carriers. These cumulative transportation impacts could cause violations of the fine particulate matter standards (PM_{10}) in San Francisco with concomitant health effects. The proposed project would contribute to these cumulative effects.

The project (if occupied) would increase the daytime population on the site above existing conditions, that would be subject to substantial danger during a major earthquake. Although the new office building would meet the most current building and seismic engineering requirements of the San Francisco Building Code, greater concentrations of people would be susceptible to injury. Such population also would contribute to congestion which, along with the debris in the streets, would impede the access of emergency services responding to fire and other earthquake-related emergencies.

The project would add shadow to Maritime Plaza open space under the jurisdiction of the Recreation and Park Department, during the time when approval of new buildings over 40 feet in height causing such shadows is prohibited under Section 295 of the *City Planning Code*. The City Planning Commission, in consultation with the Recreation and Park Commission, has established guidelines for Maritime Plaza which permit no

new shadow on that open space during the time between on hour after sunrise and one hour before sunset. Therefore, any new shadow can be presumed to have an adverse impact on the Plaza unless the two Commissions explicitly find otherwise under Section 295(b).

VIII. ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses environmental impacts associated with each alternative, and gives the sponsor's reasons for rejection in favor of the project. Regardless of the sponsor's reasons for rejection, the City Planning Commission could approve an alternative instead of the project if the Commission believed the alternative would be more appropriate.

No alternative site analysis was conducted for this EIR for a number of reasons. Between 1979 and 1985, the City of San Francisco engaged in a lengthy and expensive planning and environmental review process to evaluate and promulgate new controls for development in its Downtown office core, the C-3 districts. Adoption of the *Downtown Plan* by the Commission in 1984 and of the implementing zoning ordinance by the Board of Supervisors in 1985 represented a fine-tuned effort to control and direct growth so as to preserve the Downtown as a vital commercial and retail center and to enhance the economic vitality of the City, as well as to balance the environmental needs of the City as a whole. As part of that effort, the Board of Supervisors, through legislation, adopted a package of mitigation measures that would address the cumulative effects of downtown office growth including impacts on housing, transportation, open space, childcare, and preservation of architecturally significant buildings.

The policy to concentrate office development in the Downtown C-3 districts has been reaffirmed many times by the City Planning Commission and Board of Supervisors since 1985. Areas situated adjacent to the Downtown areas (the "ring neighborhoods") have been rezoned so as to protect those areas from the encroachment of office development, and to ensure that the Downtown continues to offer the highest commercial density in San Francisco. The ring neighborhoods which have been the subject of Master Plan or zoning amendments include North of Market (1987), Rincon Hill (1985), Chinatown (1987), Van Ness Corridor (1988) and South of Market (1990). Thus, any shift of office development outside of the C-3 areas would constitute more than a mere rezoning, but would require a major overhaul and reconsideration of the planning policies for the entire east side of the City. As part of approving the *Downtown Plan* and implementation ordinances, the Board of Supervisors also established a limit on the amount of office space that could be approved in

San Francisco (*City Planning Code* Sections 320-324), which was further modified following voter approval of San Francisco's Proposition M in 1986. This "annual limit" in effect establishes a policy that some regional office demand be accommodated in San Francisco but that some also be accommodated elsewhere in the region on sites outside San Francisco. For these reasons, it would be infeasible to consider any alternative sites for this project outside the C-3 districts or outside the jurisdiction of the City.

In addition, a shift of office development to areas elsewhere in the region would not be responsive to regional needs which require that a component or share of anticipated metropolitan growth occur in the City. A substantial part of the regional economy is dependent upon the City's ability to absorb an appropriate amount of additional growth, as indicated in the Association of Bay Area Government's land use policies. A principal feature of the ABAG plan is to concentrate development in the region's urban centers since transit can be provided more efficiently to the central core of major urban centers.

Finally, an analysis of other sites within the C-3 districts would be infeasible since there are no other sites within the downtown capable of eliminating the impacts of this project. This project, like most other Downtown office projects, has no project-specific impacts. Its only impacts are generally cumulative in nature. There are no sites within the Downtown where this project would not contribute to the cumulative impacts of office development. The EIR would find the same level of contribution to the cumulative impacts irrespective of any other Downtown location in which the project site may be located.

Moreover, under the *Downtown Plan* zoning ordinance, as well as Proposition M, office development in the City in any year is limited to 950,000 sq. ft., with a limitation to 475,000 sq. ft. per year until the space approved in the early 1980's is absorbed. As a result, an annual competition for office space has been implemented in the City for allocation of the limited square footage of development. This annual competition for office development is based on a system where all eligible projects for that period are evaluated and compared with each other. Among the issues considered is the location of the proposal within the Downtown. This system permits a continuing evaluation of appropriate locations of office space within the Downtown.

For all of the above reasons, no extensive alternative site analysis has been included in this EIR.

A. ALTERNATIVE A: NO PROJECT

DESCRIPTION

This alternative would entail no change to the project site. The proposed project would not be built there. The existing 545 Sansome Street, 517 Washington Street and 501-505 Washington Street buildings would be retained, rather than demolished for the project. This alternative could include the re-occupancy of the 545 Sansome Street building for office uses by the project sponsor.

IMPACTS

If the No-Project Alternative were implemented and existing buildings remained at their current level of occupancy, none of the impacts associated with the project would occur. The environmental characteristics of this alternative would be generally as described in the Environmental Setting sections of this report (See Chapter IV, Setting, pp. 37 to 60, for a discussion of existing conditions). Transportation and noise impacts associated with construction of the project would not occur, nor would any potential cultural resources impacts or hazardous materials impacts associated with construction of the project. Future transportation conditions (as described in Chapter V, Impacts, pp. 80 to 104) would reflect effects of cumulative development minus the project. There would be no change in energy demand on the site. Employment on the site would not increase as it would with the project. Land uses, site views, shadows and winds would not change. This alternative would not contribute to cumulative impacts on transportation at local intersections or to additional air quality impacts. This alternative would not contribute to growth inducement in areas surrounding the project site. This alternative would preserve the option to develop a similar or different type of building on the site in the future.

If the project sponsor were to re-occupy the 545 Sansome Street building, some of the impacts associated with the project would be eliminated; others would be reduced in proportion to the lesser population on the project site. Impacts attributable to building occupants, such as traffic and energy consumption, would differ from conditions described in the Environmental Setting sections of this report (See Chapter IV, Setting, pp. 37 to 60, for a discussion of existing conditions). With re-occupation, this alternative would generate approximately 1,025 person trips (38% of project), 148 automobile trips (47% of project) and 761 transit trips (46% of project) per day.

Alternative A, as with the project, would have minimal impact on the Level of Service for intersections in the project area. Net parking demand for this alternative would be 28 spaces, or 44% of the project demand of 63 spaces. Total parking demand for Alternative H would be 45 spaces, 60% of the project demand of 80 spaces. No additional parking spaces would be provided, compared to 100 spaces for the project. For this alternative, sidewalk and crosswalk pedestrian LOS (level of service) for the project block would be unimpeded or open. Land uses, site views, shadows and winds would not change if the 545 Sansome Street building were re-occupied. Transportation and noise impacts associated with construction of the project would not occur, nor would any potential cultural resources impacts or hazardous materials impacts associated with construction of the project. 545 Sansome Street contains 56,600 gsf of office space. Based on the *Downtown Plan EIR* average of 268 square feet per office employee in the C-3 District, about 210 persons would be employed at 545 Sansome Street if the building were re-occupied. Transportation impacts would be greater than today, but less than those of the proposed project. Energy demand would increase with the re-occupancy of 545 Sansome Street, but would be less than the project.

The 545 Sansome Street building has not been seismically reinforced, nor would such reinforcement be required under applicable building codes. If the building were re-occupied, tenants would be exposed to a potentially greater risk in the event of an earthquake than would tenants of the project, because of the increased efficacy and stringency of current building codes over older ones.

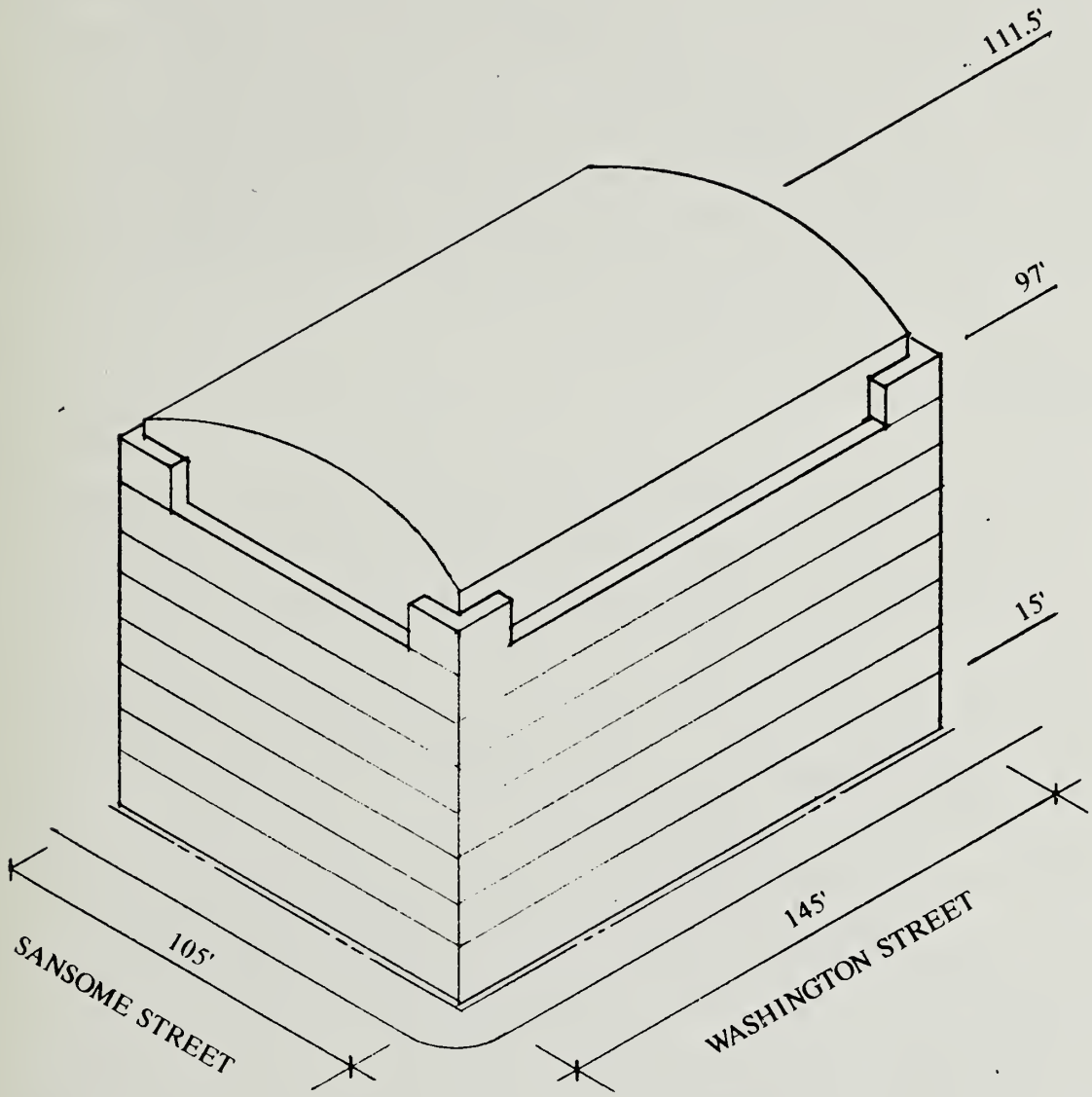
REASONS FOR REJECTION

This alternative was rejected by the project sponsor because it would not provide additional office space. It would not provide new open space on the project block and would not redesign the Redwood Park open space or the Mark Twain Alley pedestrian area.

B. ALTERNATIVE B: NO NEW SHADOW ON MARITIME PLAZA

DESCRIPTION

This alternative would not add new shadow to Maritime Plaza. The building would be the proposed project with two fewer office floors. The rounded roof form would be retained . (See Figure 21). Facade articulation and finish materials would be similar to



SOURCE: Skidmore, Owings & Merrill.

Transamerica III ■

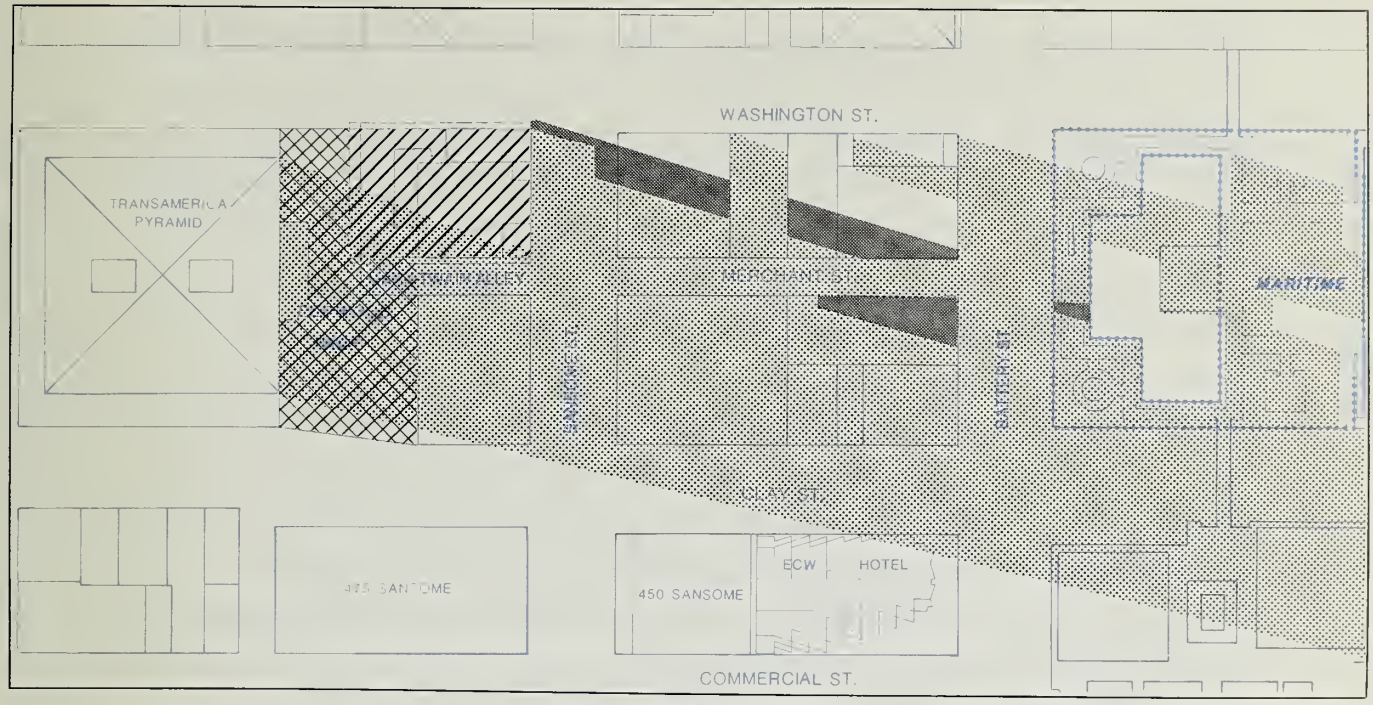
Figure 21
Alternative B - No Shadow
Impacts on Maritime Plaza

those proposed for the project. This alternative would contain 114,800 gsf of office space (compared to 136,000 gsf with the project), and the same amounts of retail and mechanical space as the project. It would result in 35,700 net new gsf of office space. Based on occupied existing uses, this alternative would add the equivalent of about 92,300 gsf new office space (compared to 113,500 gsf with the project) to the site. This alternative would have the same amount and configuration of parking as the project. The FAR of this alternative would be 5.6:1, compared to 6.5:1 with the project. This alternative would be eight stories and about 112 feet tall; compared to the project, at ten stories and about 135 feet. Open space would be provided on the block in the same manner as with the project.

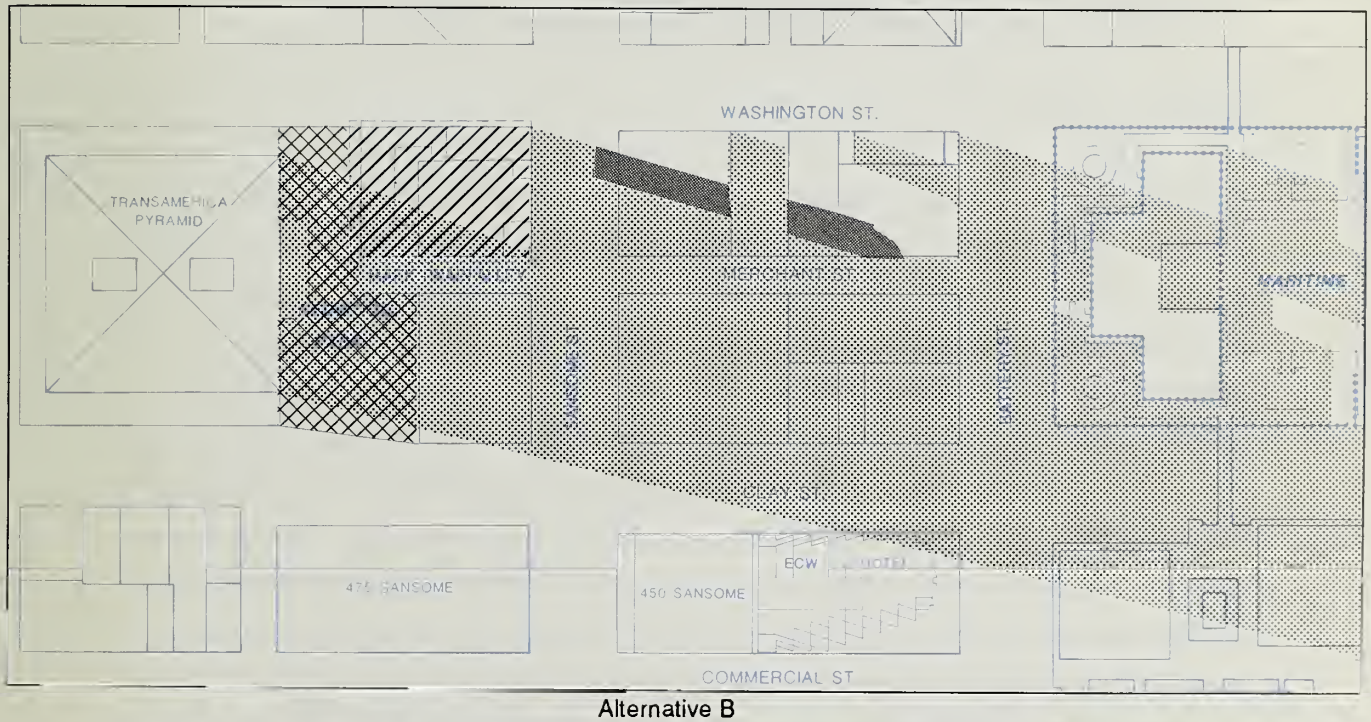
IMPACTS

Because this alternative would be 23 feet shorter than the project, it would be less visible than the project in mid- to long-range views. Shadow from this alternative would be less than with the project. Alternative B would cause no new shadow on Maritime Plaza, a property under the jurisdiction of the Recreation and Park Department, during times specified by Proposition K (see Figure 22). As with the project, this alternative would cast shadow on Redwood Park, a publicly accessible open space owned by the project sponsor.

Total travel demand, air quality and energy impacts of this alternative would be less than those of the project, because of its smaller size. Nevertheless, traffic and air quality effects on local intersections would be the same as with the project, because this alternative contains the same amount of parking as the project. Based on net new occupied square footages, this alternative would generate 2,353 person trips (86% of project), 254 automotive trips (81% of project) and 1,450 transit trips (87% of project) per day. Alternative B, as with the project, would have minimal impact on the Level of Service for intersections in the project area. Net parking demand for this alternative would be 53 spaces, or 84% of the net project demand of 63 spaces. Total parking demand for Alternative B would be 69 spaces, 80% of the net project demand of 80 spaces. One hundred parking spaces would be provided, as with the project. For this alternative, sidewalk and crosswalk pedestrian LOS for the project block would also be unimpeded or open. The potential, during construction, of encountering subsurface cultural resources or subsurface hazardous materials would be similar to the project, because a similar amount of excavation would be required. Construction noise and air quality impacts would be of shorter duration because the construction period



Project Shadow



Alternative B

SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 22
Alternative B - Shadow Pattern
April 21 (5:51 p.m. PDT)

would be shorter. This alternative would result in a net increase in on-site employment of about 370 persons, compared to about 450 with the project. It would generate a housing requirement of about 14 new dwelling units in San Francisco (based on the OAHPP formula), compared to 22 units with the project. Growth-inducing impacts of this alternative would be similar to those of the project, but of a lesser magnitude.

REASONS FOR REJECTION

The project sponsor has rejected this alternative, because the sponsor believes that the Project shadow effect would not significantly impact the use of Maritime Plaza. The Alternative would substantially limit the development potential of the site as permited under the *Downtown Plan*, rendering this alternative economically infeasible. Specifically, this alternative would provide a 37,500 gsf increase in office space on the site compared to the amount in existing buildings.

C. ALTERNATIVE C: PROJECT WITH NO CONDITIONAL USE AUTHORIZATION REQUIRED FOR PARKING

DESCRIPTION

This alternative would be the same as the project, except that it would only include 9,504 gsf of parking, compared to 21,500 gsf with the project. The reduction in parking area to 7% of gross floor area would make all parking an accessory use not requiring conditional use authorization from the City Planning Commission. This alternative would be 135 feet tall and would contain the same amounts of retail and office space as the project. Using Department of City Planning standards, the 9,504 gsf of parking would accommodate 44 vehicles under tandem-valet operations, compared to 100 vehicles with the project. Mechanical and open space would be provided in the same amounts and configurations as with the project. The consolidated, underground loading area serving the project and the existing Transamerica II building, connected by an underground service tunnel to that building would be provided.

IMPACTS

Impacts on views, shadows, wind, urban design, biology and growth inducement would be the same as with the proposed project. Construction noise, air quality and

transportation impacts would be less, because this alternative would require one level less excavation than would the project. The potential, during construction, of encountering subsurface cultural resources would be less than with the project, because of the lesser extent of excavation required for this alternative.

Travel demand, air quality and energy impacts associated with on-site uses would be the same as those of the project, because the amount of office and retail space would be the same as with the project. The parking demand generated by this alternative would also be the same as that generated by the project. Traffic and air quality effects on local intersections, however, would be less than with the project, because this alternative would have fewer on-site parking spaces than the project. The project block would have fewer parking spaces under this alternative as long as the Transamerica Pyramid garage continued to operate as at present, using large, self-park stalls which are generally fully occupied. Using Department of City Planning standards for use of parking space or tandem-valet operations, however, there would be adequate parking on the project block to accommodate Transamerica III demand with this alternative. Thus, the local traffic effects of this alternative would be the same as those of the project, if the Transamerica Pyramid garage operated under these standards.

Based on net new occupied square footage, this alternative would generate 2,732 person trips (100% of project), 312 automotive trips (100% of project) and 1,659 transit trips (100% of project) per day. Alternative C, as with the project, would have minimal impact on the Level of Service for intersections in the project area. For Alternative C net parking demand would be 63 spaces and total parking demand would be 80 spaces, the same as with the project. Sidewalk and crosswalk pedestrian LOS for the project block would be unimpeded or open for this alternative, as well.

REASONS FOR REJECTION

The project sponsor has rejected this alternative because, in the sponsor's opinion, it conflicts with the objective of the *Downtown Plan* to provide additional short-term parking in the parking belt, because the alternative would not help meet the demand for parking attributable to the project on-site, and because it would not provide off-street parking for the Transamerica II building.

D. ALTERNATIVE D: PROJECT WITH NO PARKING

DESCRIPTION

This alternative would have all of the characteristics of the proposed project, except that it would contain no parking. Under this alternative, the 21,500 gsf of parking area included in the project (which could accommodate 100 vehicles under tandem valet operations) would not be provided. The consolidated, underground loading area serving the project and the existing Transamerica II building and connected by an underground service tunnel to the building Transamerica II, would not be provided. One loading dock would be provided in the Mark Twain Alley facade of Transamerica III. The Transamerica II at-grade loading dock in Mark Twain Alley would be retained. Mark Twain Alley would not be improved as a pedestrian mall. Excavation for this alternative would be limited to excavation required for elevator pits and mechanical areas.

IMPACTS

Impacts on views, shadows, wind, urban design, biology and growth inducement would be the same as with the proposed project. Construction noise, air quality and transportation impacts would be less, because this alternative would require less excavation than would the project. The potential, during construction, of encountering subsurface cultural resources or subsurface hazardous materials would be less than with the project, because of the lesser amount of excavation required for this alternative.

Travel demand, air quality and energy impacts associated with on-site uses would be the same as those of the project, because the amount of office and retail space would be the same as with the project. The parking demand generated by this alternative would also be the same as that generated by the project. Traffic and air quality effects on local intersections, however, would be less than with the project, because this alternative would have no on-site parking spaces, compared to 100 with the project. Based on net new occupied square footage, this alternative would also generate 2,732 person trips (100% of project), 312 automotive trips (100% of project) and 1,659 transit trips (100% of project) per day. Alternative D, as with the project, would have minimal impact on the Level of Service for intersections in the project area. The project block would have fewer parking spaces under this alternative as long as the Transamerica Pyramid garage continued to operate as at present, using large, self-park stalls which

are generally fully occupied. Using Department of City Planning standards for use of parking space or tandem-valet operations, however, there would be adequate parking on the project block to accommodate Transamerica III demand with this alternative. Thus, the local traffic effects of this alternative would be the same as those of the project, if the Transamerican Pyramid garage operated under these standards. For Alternative D net parking demand would be 63 spaces and total parking demand 80 spaces, the same as with the project. No additional parking spaces would be provided, as compared to 100 spaces for the project. For this alternative, sidewalk and crosswalk pedestrian LOS for the project block would be unimpeded or open.

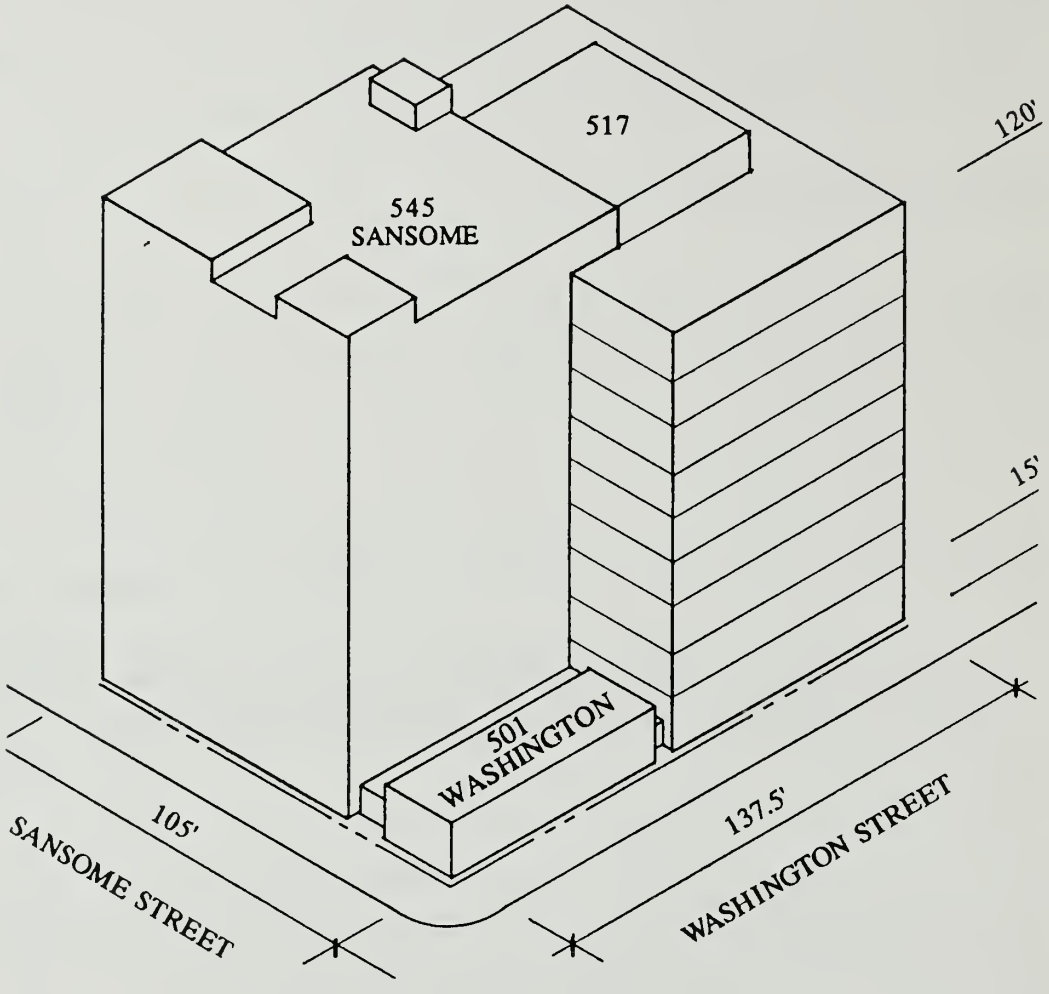
REASONS FOR REJECTION

The project sponsor has rejected this alternative because, in the sponsor's opinion, it would not fulfill the objective of the *Downtown Plan* to provide short-term parking in the short-term parking belt, because the building would not be marketable without off-street parking, because the alternative would not help meet the demand for short-term parking attributable to the project because this alternative would not provide off-street parking or loading for the Transamerica II building, and because this alternative would not provide for conversion of Mark Twain Alley to a pedestrian mall.

E. ALTERNATIVE E: RETAIN 545 SANSOME AND 501-505 WASHINGTON AND CONSTRUCT 47,500 GSF OFFICE AT 517 WASHINGTON

DESCRIPTION

This alternative would demolish 517 Washington Street, an office and retail building constructed in 1910, and would retain 545 Sansome Street, a reinforced-concrete building built in 1930, and 501-505 Washington Street, a retail building constructed in 1975. (See Figure 23.) This alternative would construct a total of 47,500 gsf of new office space at 517 Washington Street, would add 25,000 net new gsf of office space to the project site, and would have an FAR of 4.6 (compared to 6.5 with the project). Based on existing space leased to tenants in late 1989, this alternative would add 81,600 gsf of net new occupied office space to the site. This alternative would not include the rounded roof form associated with the project. No parking would be provided by this alternative. One at-grade loading space would be provided accessible from Mark Twain Alley. Alternative E would not relandscape Redwood Park, construct an indoor open space in Transamerica II, improve Mark Twain Alley, replace street trees on the project block or repave the



Transamerica III ■

SOURCE: Skidmore, Owings & Merrill.

Figure 23
Alternative E - Retain Existing
545 Sansome and 501 Washington
Street Buildings

project block. The approximately 1,000 sq. ft. of open space the *City Planning Code* would require of Alternative E would be provided in a location to be determined.

IMPACTS

This alternative would retain the 545 Sansome Street building, rated "C" in *Splendid Survivors* and unrated in the *Downtown Plan* or *City Planning Code* surveys. Impacts attributable to the occupants of this alternative were analyzed taking into consideration the 22,500 gsf of office space and 4,050 gsf of retail space leased to tenants in late 1989. Impacts on views, shadows, wind, employment, housing demand, biology and growth inducement would be less than with the proposed project. About 400 people would be employed on the project site, about 150 people fewer than with the project and an increase of about 300 employees over existing conditions. Breaking the proposed use of the site into two buildings would make the project more responsive to urban design issues, particularly along Jackson Square, but would cause increased energy and public services impacts as a result of the need to maintain two, separate, functioning building cores.

Construction noise, air quality and transportation impacts associated with this alternative would be less than with the project because of the lesser depth and areal extent of excavation associated with the construction of a building on less than half of the project site. The potential, during construction, of encountering subsurface cultural resources or subsurface hazardous materials would be less than with the project, because of the lesser extent of excavation required for the alternative. Travel demand, parking demand and air-quality impacts associated with on-site uses in this alternative would be less than with the project, because the amount of office space, retail space and employment on the site would be less than the project. Traffic and air quality effects on local intersections would be less than with the project, because this alternative would have no on-site parking spaces, compared to 100 with the project. Based on net new occupied square footage this alternative would generate 2,628 person trips (96% of project), 227 automotive trips (73% of project) and 1,415 transit trips (85% of project) per day. Alternative E, as with the project, would have minimal impact on the Level of Service for intersections in the project area. The project block would have fewer parking spaces under this alternative as long as the Transamerica Pyramid garage continued to operate as at present, using large, self-park stalls which are generally fully occupied. Using Department of City Planning standards for use of parking space or tandem-valet operations, however, there would be adequate parking on the project block to accommodate Transamerica III demand with this

alternative. Thus, the local traffic effects of this alternative would be the same as those of the project, if the Transamerica Pyramid garage operated under these standards. Net parking demand for this alternative would be 38 spaces, 60% of the project demand of 63 spaces; total Alternative E parking demand would be 55 spaces, 68% of the project demand of 80 spaces. Sidewalk and crosswalk pedestrian LOS for the project block would be unimpeded or open for this alternative.

The 545 Sansome Street building has not been seismically reinforced, and would not require reinforcement under applicable planning and building codes. If the building were re-occupied, tenants could be exposed to a potentially greater risk in the event of an earthquake than would tenants of the project, because of the increased efficacy and stringency of current building codes over older ones.

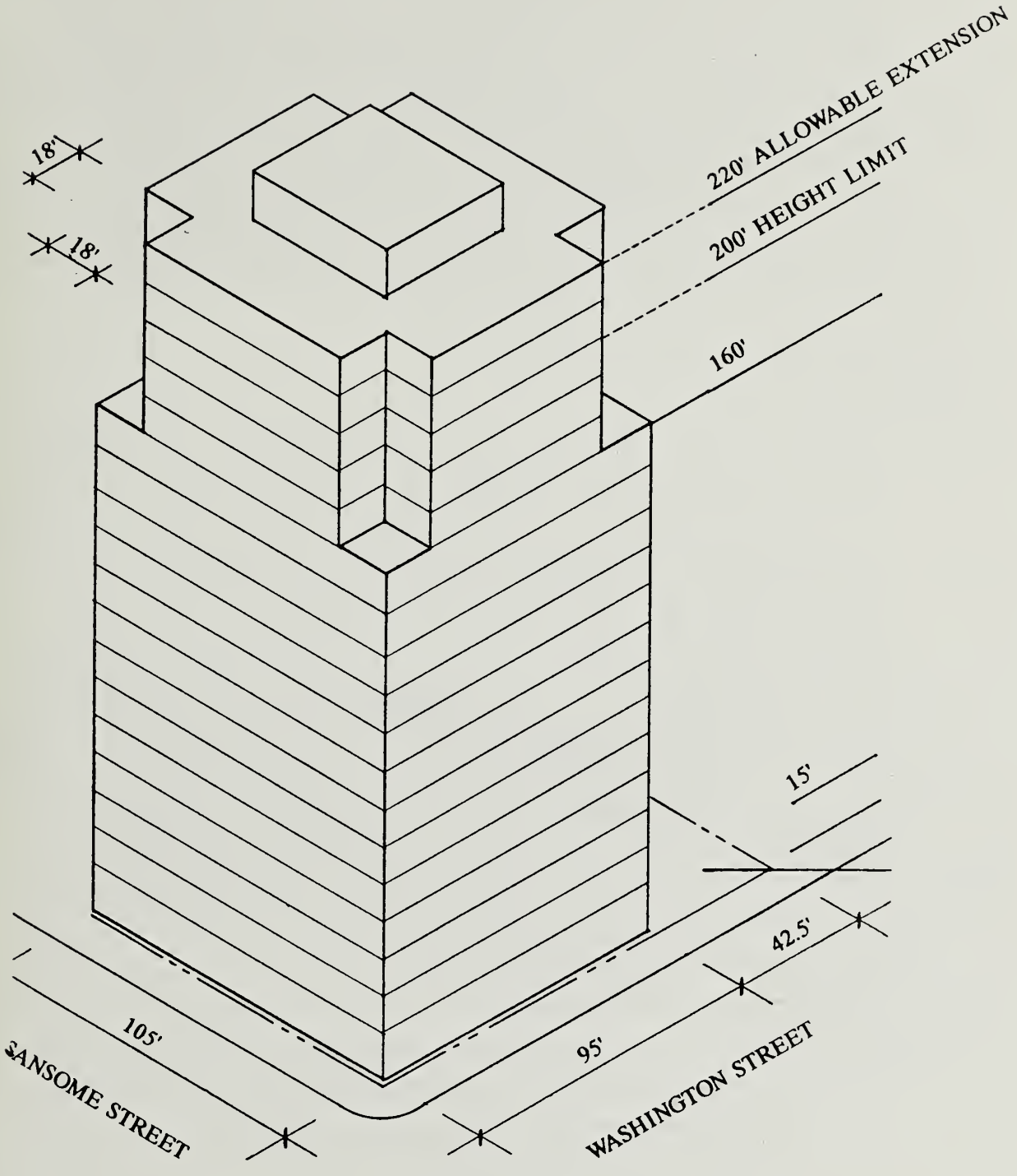
REASONS FOR REJECTION

The project sponsor has rejected this alternative because, in the sponsor's opinion, it would not use the development potential of the site under the Downtown Plan; nor provide the sponsor with sufficient office space in its headquarters block; it would retain a building that has not undergone seismic reinforcement; it would result in small, inefficient floor plans requiring two, separate cores (one for each building); it would not provide on-site parking; and it would not provide for Mark Twain Alley to be converted fully to a pedestrian mall. If seismic stabilization were required before 545 Sansome Street could be re-occupied, the sponsor would probably not re-occupy the building.

F. ALTERNATIVE F: TALLER BUILDING WITH SMALLER FLOOR SIZES AND LARGER ADDITION TO REDWOOD PARK

DESCRIPTION

This alternative would include the demolition of all three buildings on the project site and the construction of a 17-story (220-ft. tall) office building with approximately 163,000 gsf of office space and 4,750 gsf of retail space (See Figure 24). The smaller footprint of this alternative would not remove 790 sq. ft. of existing Redwood Park and would also provide about 5,250 sq. ft. of additional open space. Alternative F would thus provide a total of about 26,650 sq. ft. of open space in Redwood Park on the project block, compared to about 20,610 sq. ft. with the project. Both Alternative F



SOURCE: Skidmore, Owings & Merrill.

Transamerica III ■

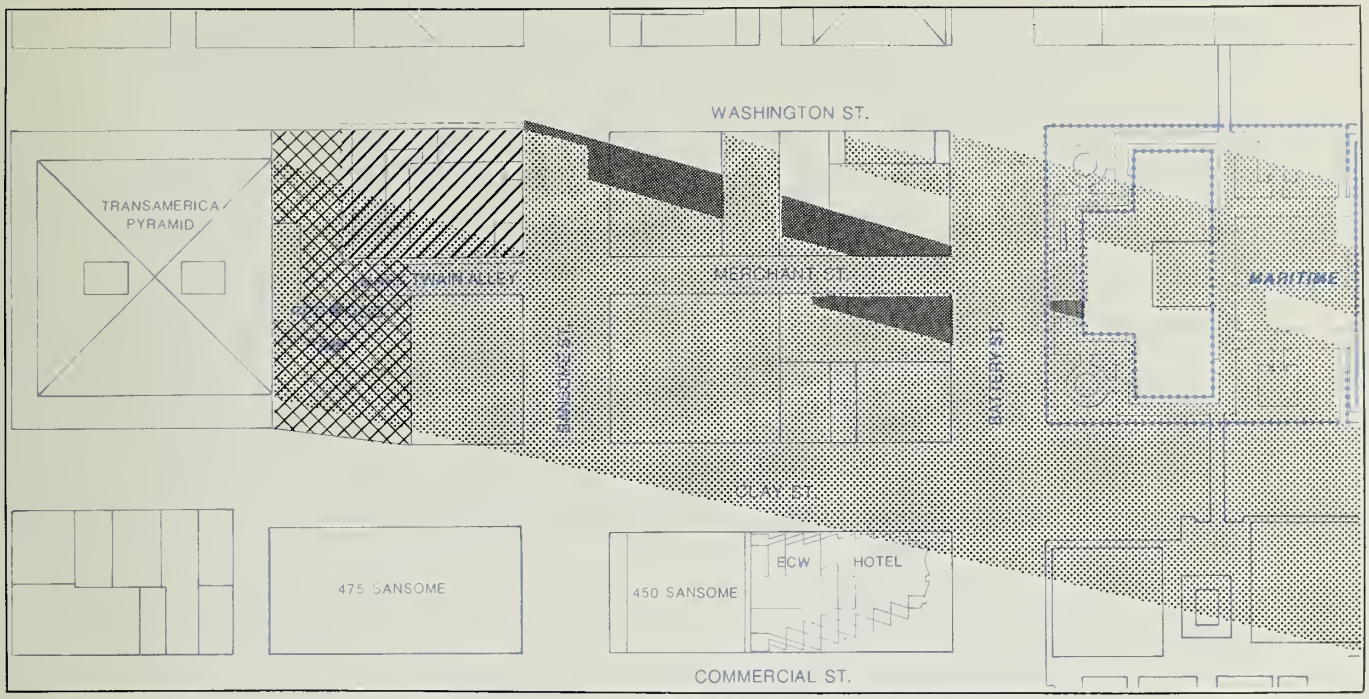
Figure 24
Alternative F - Taller Project with
Smaller Footprint and Expanded Redwood Park

and the proposed project would provide about 2,400 sq. ft. of open space in the Transamerica II greenhouse. The parking and loading configurations would be approximately the same as for the project. This alternative would require conditional use authorization for the 10,100 gsf of parking area in excess of the 7% (11,400) of office square footage permitted by the *City Planning Code* as an accessory use and would have an FAR of 7.6:1 (compared to 6.5.1 with the project). Based on occupied existing uses, this alternative would add the equivalent of about 140,500 gsf of office space and 700 gsf of retail space to the project site, compared to 113,500 gsf and 4,550 gsf with the project.

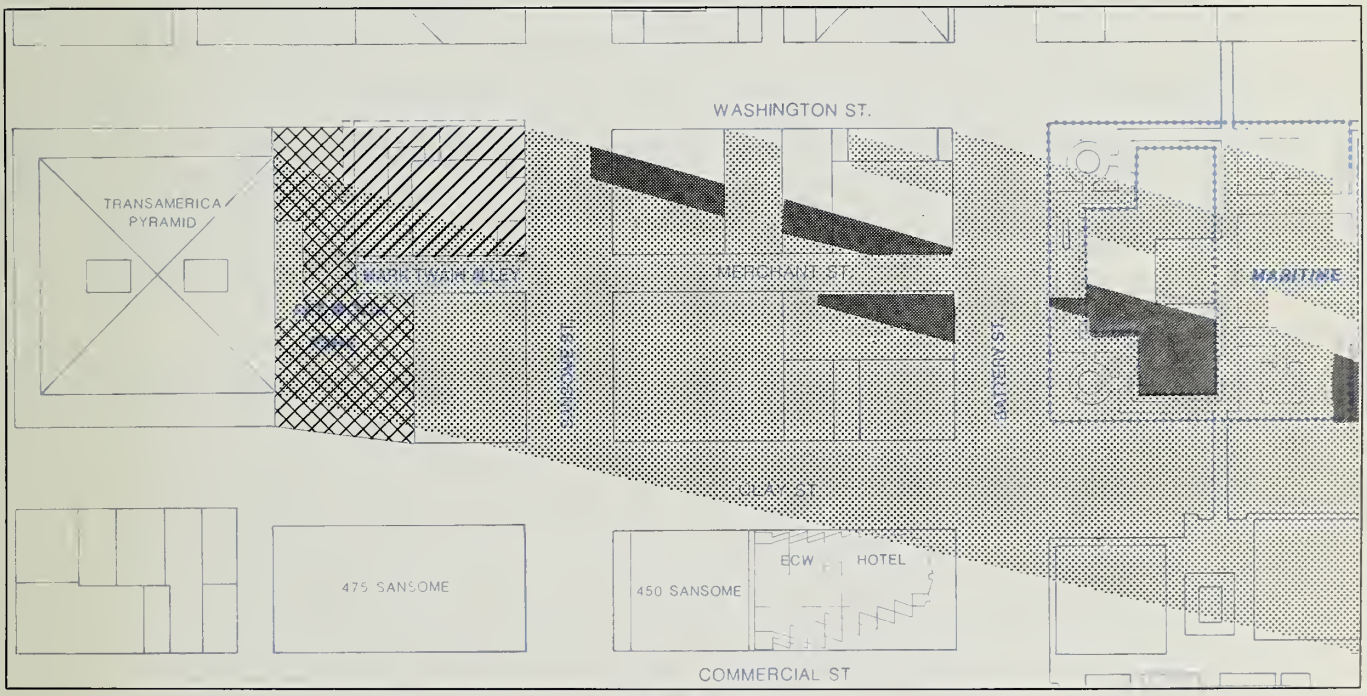
IMPACTS

This alternative would result in the same potential as the project that subsurface cultural resources or hazardous materials would be encountered during construction, because the sizes and configurations of its subsurface levels would be about the same as with the project. This alternative would add about 540 new jobs on the site, compared to about 450 with the project. Construction noise, air quality and transportation impacts would be about the same as with the project but could last somewhat longer. This alternative would be about 85 feet taller than the project; therefore, it would be more visible than the project in mid- and long-range views of the area. This alternative would cause more new shadow on Maritime Plaza, for longer periods, than would the project, because of its greater height (see Figure 25). Alternative F would shade a greater area of Maritime Plaza than would the project, about 1,500 sq. ft. southeast of the western portion of the plaza at about one hour before sunset in August, Septemebr, and March and April. The alternative would exceed Proposition K criteria for no new shadow on Maritime Plaza during the time specified by Proposition K. This alternative would have similar wind effects to those of the proposed project. The greater height of this alternative would make it less transitional between the Financial District and Jackson Square, but the reduced floorplate would make the alternative less bulky than the project.

Travel demand, parking demand, air quality and energy impacts of this alternative would be more than with the project, because this alternative contains about 20% more office space than the project. This alternative would add 83,900 gsf of new office space and 700 gsf of new retail space to the project site, compared to 56,000 gsf of new office space and 4,550 gsf of new retail space with the project. Based on net new



Project Shadow



Alternative F

0 200 Feet

Existing Shadow

Net New Project Shadow

Project Site

Redwood Park (as proposed by project)

Transamerica III ■

SOURCE: Environmental Science Associates, Inc.

Figure 25
Alternative F - Shadow Pattern
April 21 (5:51 p.m. PDT)

occupied square footage, this alternative would generate 2,650 person-trips (97% of project), 372 automotive trips (119% of project) and 1,920 transit trips (116% of project) per day. The reduced total person-trips reflects the trip generation characteristic of the reduced retail space with this alternative. Vehicle and transit trips would reflect increased office space. Alternative F, as with the project, would have minimal impact on the Level of Service for intersections in the project area. Net parking demand for this alternative would be 72 spaces, 114% of the project demand of 63 spaces. Total Alternative F parking demand would be 88 spaces, 110% of the total project demand for 80 spaces. One hundred six parking spaces would be provided, as compared to 100 spaces for the project. For this alternative, sidewalk and cross walk pedestrian LOS for the project block would also be unimpeded or open.

REASONS FOR REJECTION

The sponsor has rejected this alternative because it would cause new shadows on Maritime Plaza during the hours protected by Proposition K, the Sunlight Ordinance, that under the City's Guidelines for the implementation of Proposition K are defined as significantly affecting use of Maritime Plaza. The smaller floorplates in this alternative would be less efficient than those of the project, but the structure would require about the same amount of excavation and the same basement square footage to accommodate parking and loading.

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Five Hundred Sansome Street Co.
500 Sansome Street
San Francisco, CA 94111

229/18
Hansal Corporation
c/o Ritchie & Ritchie Mgmt. Corp.
41 Sutter Street #200
San Francisco, CA 94104

ADJACENT PROPERTY OWNERS
(Continued)

Don Dianda/Paul Bermani
c/o Coldwell Banker-K.A. Andrews
P.O. Box 7987
San Francisco, CA 94120

227/48
Bank of Canton of California
555 Montgomery Street
San Francisco, CA 94111

228/29
The Lurie Company
c/o Bank of San Francisco
550 Montgomery
San Francisco, CA 94111

228/30
By Pass Trust
c/o Linda Chan
563 Clay Street
San Francisco, CA 94111

228/32
Harima U.S.A. Inc.
c/o Matsui Inaoka
556 Commercial Street
San Francisco, CA 94111

228/39
Mosten Management Co.
c/o James Walsh
9 W. 57th Street, 11th Floor
New York, NY 10019

228/31
Merrill & Laura Jew
1426 Washington Street
San Francisco, CA 94109

Montgomery Washington Tower
655 Montgomery Street
San Francisco, CA 94111
Attn: Bette Van Horst,
Commercial Building Manager

Montgomery Washington Tower
Homeowner's Association
655 Montgomery Street, Suite 1400
San Francisco, CA 94111
Attn: Lynn Von Weidenfield

PROJECT SPONSOR

Transamerica Realty Services, Inc.
600 Montgomery Street
San Francisco, CA 94111
Attn: Thomas Pokorski, Vice President

PROJECT ARCHITECT

Skidmore, Owings & Merrill
333 Bush Street, 22nd Floor
San Francisco, CA 94104
Attn: Steve Weindel

PROJECT ATTORNEY

Morrison & Foerster
345 California Center, 31st Floor
San Francisco, CA 94104-2105
Attn: Steve Vettel

MEDIA

Associated Press
1390 Market Street, Suite 318
San Francisco, CA 94102
Attn: Bill Shiffman

Leland S. Meyerzove
KPOO - FM
P.O. Box 6149
San Francisco, CA 94101

San Francisco Bay Guardian
2700 - Nineteenth Street
San Francisco, CA 94110
Attn: Patrick Douglas, City Editor

San Francisco Business Times
325 - 5th Street
San Francisco, CA 94107
Attn: Tim Turner

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attn: Martin Halstuk,
Dawn Garcia

MEDIA (Continued)

San Francisco Examiner
P.O. Box 7260
San Francisco, CA 94120
Attn: Gerald Adams

The Sun Reporter
1366 Turk Street
San Francisco, CA 94115

Tenderloin Times
146 Leavenworth Street
San Francisco, CA 94102
Attn: Rob Waters

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San Francisco, CA 94102
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Library
215 Fremont Street
San Francisco, CA 94105
Attn: Jean Circiello

Stanford University Libraries
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Documents
State and Local Documents Division
Stanford, CA 94305

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San Francisco State University
1630 Holloway Avenue
San Francisco, CA 94132

Hastings College of the Law - Library
200 McAllister Street
San Francisco, CA 94102-4978

Institute of Government Studies
109 Moses Hall
University of California
Berkeley, CA 94720

X. APPENDICES

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NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: **October 4, 1990**

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister Street, 6th Floor, San Francisco, CA 94102

Agency Contact Person: Barbara W. Sahm **Telephone:** (415) 558-6378

Project Title: 89.501 E - Transamerica III
545 Sansome Street / 501 Washington Street

Project Sponsor: Transamerica Realty Services, Inc.
Contact Person: Thomas C. Pokorski

Project Address: 545 Sansome Street / 501 Washington Street
Assessor's Block and Lot: 207 / 35, 36 and portions of 32, 33 and 37
City and County: San Francisco

Project Description:
The project would replace the existing buildings on the site with a 10-story office / retail building with about 136,000 gross square feet of office space, about 12,600 gross square feet of retail space and about 21,500 gsf of parking; redesign the Redwood Park open space; and improve the Mark Twain Alley pedestrian mall. Conditional Use authorization would be required for parking over 7% of gross square footage.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing an Appeal of this Determination to the City Planning Commission:
October 15, 1990.

An appeal requires: 1) a letter specifying the grounds for appeal, and; .
2) a $75.00 filing fee.

Barbara W Sahm

BARBARA W. SAHM, Environmental Review Officer

ER5 6/85

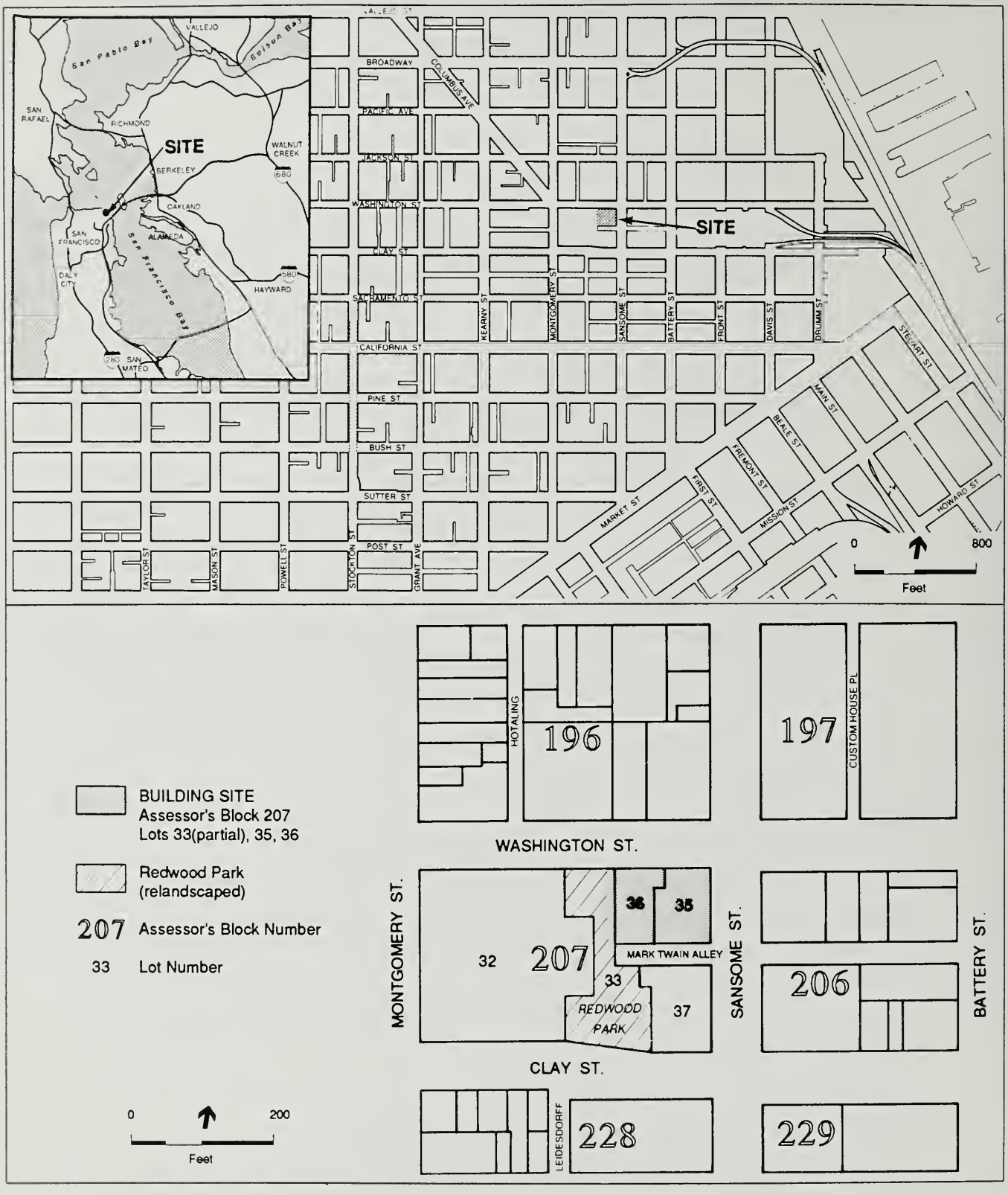
c. Robert Passmore
Project Sponsor
Distribution List
Bulletin Board
MDF

APPENDIX A: TRANSAMERICA III PROJECT INITIAL STUDY (89.501E), OCTOBER 4, 1990

I. PROJECT DESCRIPTION

The project would construct a 10-story office building with two levels of subsurface parking at 545 Sansome Street / 501 Washington Street, in the northeast corner of the block bounded by Clay, Montgomery, Washington, and Sansome Streets (see Figure 1). The project also would re-landscape the open space on the block, and consolidate and improve truck loading areas for the Transamerica II (505 Sansome Street) and the proposed 545 Sansome Street buildings under the proposed building. The project site comprises Lots 35 and 36 and portions of Lots 32, 33 and 37 of Assessor's Block 207, in the City and County of San Francisco. The site of the new building contains three buildings which would be demolished if the new building were constructed: 501-505 Washington Street with about 2,000 gross square feet (gsf) of retail space; 517 Washington Street with about 2,050 gsf of retail / restaurant space and 22,500 gsf of office space; and 545 Sansome Street with about 56,600 gsf of office space. Also on the project block are the Transamerica Pyramid (Transamerica I) at 600 Montgomery Street, the 505 Sansome Street office tower (Transamerica II), Mark Twain Alley (a pedestrian mall, formerly Merchant Street) and Redwood Park (publicly accessible, privately owned open space).

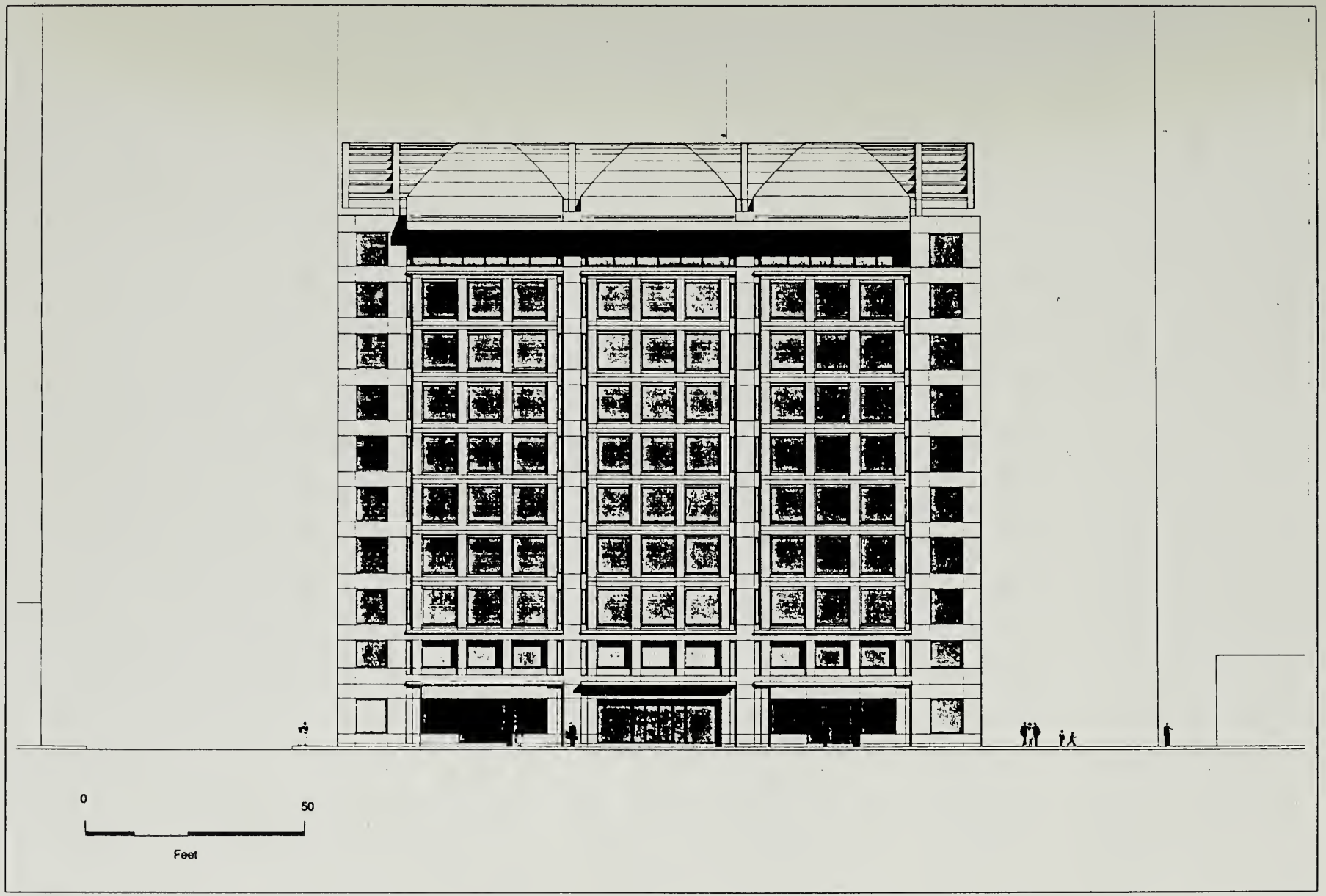
The new building (Transamerica III) would be about 135-feet tall (10 stories) with nine floors of office space, a ground-floor retail level, a penthouse mechanical level and two underground parking levels on a 22,732.5 square foot site comprising Lots 35 and 36 and a portion of Lot 33 (see Figure 2, p. 3). This building would contain about 136,000 gsf of office floor area, 12,600 gsf of retail floor area, 4,800 gsf of mechanical floor area, 21,500 gsf of parking floor area and 6,000 gsf of loading and ramp area. The project would add about 56,900 gsf of net new office space and about 8,500 gsf of net new retail space to the site. About 510 persons would occupy the office space, including between 165 and 200 persons employed by the project sponsor or its affiliates. Approximately 35 retail jobs would be provided. Taking into consideration existing office and retail space on the project site that was partially occupied by tenants as of late 1989, the project would effectively add about 113,500 gsf of new office space and 7,600 gsf of new retail space to the site. Net new employment on the site would be about 450 persons.



SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 1
Project Location



Transamerica III ■

SOURCE: Skidmore, Owings & Merrill

Figure 2
Washington Street Elevation

The project would construct about 21,500 gsf of additional parking on two levels beneath the new building. The 21,500 gsf of additional parking, which would serve the Transamerica II and Transamerica III buildings, would constitute about 15.8% of the gross floor area of the Transamerica III building. Conditional Use authorization would be required for the approximately 5,280 square feet of parking in excess of the 7% of gross floor area (9,504 square feet) permitted by the *City Planning Code* as an accessory use.

The Transamerica Pyramid, Lot 32, is surrounded by an at-grade pedestrian arcade. This arcade would be redesigned and reconstructed with new landscaping and pavers to match the rest of the Transamerica block.

Transamerica II, Lot 37, contains ground-level and basement level uses that would be altered by the project. A pavilion (containing a restaurant and extending into Redwood Park from the northwest corner of this building) would be remodeled to connect the pavilion with the Redwood Park open space. Open space may be provided on the roof of the remodeled pavilion. A basement courtyard in the southwest corner of Transamerica II would be converted to an atrium. The project would construct a loading facility under Transamerica III to serve both Transamerica III and Transamerica II, allowing the existing Transamerica II at-grade, van-sized, loading space on Mark Twain Alley to be closed and converted to retail space.

Redwood Park, Lot 33, is a privately owned, publicly accessible open space, west of the proposed new building, now comprising about 21,400 square feet of private open space completed in 1972 as part of the Transamerica Pyramid. The project would re-landscape Redwood Park and permanently dedicate the park as public open space. The re-landscaping would include: removal of unhealthy redwood trees; temporary boxing of some healthy redwood trees, currently adjacent to the site of the proposed building, to allow construction of the foundation and basements; installation of new ornamental trees; and redesign of access in the park to provide direct access from all three buildings on the block. Redwood Park would be replanted with some of the removed redwoods; the healthy redwood trees not replanted in Redwood Park would be donated to the Recreation and Park Department to be planted in Golden Gate Park. The project would install new pavers on all of the sidewalks and arcade areas on the block. The project would also replace the existing street trees on the block with new trees and plant about 50 additional street trees to provide a consistent streetscape on all sides of the block.

Use of the area below Mark Twain Alley for a passageway between the new loading facility in the basement of Transamerica III and the basement of Transamerica II would require approval of partial vacation of that street by the Department of Public Works. Conversion of Mark Twain Alley to permanent open space / pedestrian use would require a quit claim on vehicular access by surrounding property owners, under the Pedestrian Mall Act. In this case, the Transamerica Corporation and its affiliates are the surrounding property owner.

The site is in the C-3-O (Downtown Office) District and 200-S Height and Bulk District. The basic permitted floor area ratio (FAR) is 9.0 and the maximum allowable FAR, including transferable development rights (TDR) is 18:1. The FAR of the project would be about 6.2:1. No TDR would be required.

Project construction would take about 18 to 24 months. Total construction cost would be about $18,600,000 (1990 dollars). The project sponsor is Transamerica Realty Services, Inc., a subsidiary of the Transamerica Corporation; the project architect is Skidmore, Owings and Merrill.

II. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

Some of the environmental effects that would result from the proposed project could be significant. Potential impacts that require further analysis in an Environmental Impact Report (EIR) include: transportation, cultural resources, biology, construction noise, wind and shadows. Land use and urban design will also be presented in the EIR, as will seismic issues.

B. INSIGNIFICANT EFFECTS

Some of the environmental effects that would result from the proposed project would either be insignificant or be mitigated by measures incorporated into the project design. These effects require no further analysis and will not be addressed in the EIR.

Glare: Mirrored glass would not be used.

Population and Housing: The project would comply with the Office Affordable Housing Production Program Ordinance. Cumulative and indirect effects, including those of the project, are addressed in the *Mission Bay EIR* and *Downtown Plan EIR*.

Operational Noise: After completion, building operation and project-related traffic would not perceptibly increase noise levels in the site vicinity (see mitigation measure on p. 28). Operational noise would be regulated by the San Francisco Noise Ordinance and the project would comply with the Noise Guidelines of the Environmental Protection Element of the *San Francisco Master Plan.*

Air Quality: Project construction would have short-term impacts on air quality in the site vicinity. Mitigation measures to reduce particulate and hydrocarbon emissions generated during construction activities are included as part of the project (see mitigation measure on p. 28). After construction, building operation and project-generated traffic would cause air quality impacts below the level the Bay Area Air Quality Management District has established as thresholds of significance.

Utilities/Public Services: The project would contribute to the cumulative demand for public utilities and services in the downtown. Such impacts anticipated from cumulative downtown development were analyzed in the *Downtown Plan EIR* and no significant impacts were identified.

Geology/Topography: A preliminary geotechnical investigation has been made for the project, and a final detailed geotechnical report would be prepared by an engineering geologist licensed in California prior to commencement of construction. This material would be reviewed by the City Bureau of Building Inspection (BBI) as part of permit review. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project as required by the BBI. Measures to mitigate potential impacts associated with excavation and dewatering are included as part of the project (see p. 28).

Water: The site is covered by impervious surfaces and Redwood Park. The project would not affect drainage patterns or water quality. See also the measures referenced above to mitigate the potential impacts of dewatering and excavation.

Hazards: The project would not create a health hazard or be affected by hazardous uses. Measures to ensure project compliance with the Maher Ordinance and with the City's Emergency Response Plans are included in the project (see p. 29).

Energy: The project would be constructed to conform with the energy requirements of Title 24 of the *California Code of Regulations*. Its annual energy budget would be about 167,000 Btu per square foot. Peak electrical energy and natural gas use would coincide with PG&E's systemwide peaks. Cumulative and indirect effects, including those of the project, are addressed in the EIR prepared for the *Downtown Plan*.

A. COMPATIBILITY WITH EXISTING ZONES AND PLANS	Not Applicable	Discussed
1) Discuss any variances, special authorizations, or changes proposed to the City	___	X
* 2) Discuss any conflicts with any adopted environmental plans and goals of the City or Region, if applicable.	X	___

The proposed project would comply with the *City Planning Code* requirements concerning height, bulk and use in the C-3-O (Downtown Office) Use District and 200-S Height and Bulk District in which the proposed project would be located. No variances from the *City Planning Code* would be required. The project would provide artwork and open space, as

required by the *City Planning Code*, in an expanded Redwood Park. The project would require approval under *City Planning Code* Section 309, Downtown Review, and Section 321, Office Development: Annual Limit. The project would also require an exception under Section 148, Reduction of Ground-Level Wind Currents in C-3 Districts, as part of Section 309 review, to continue to exceed pedestrians wind speed criteria. The approximately 136,000 gross square feet (gsf) of office space would apply to the annual limit imposed on office space approvals. The amount of space proposed for parking would exceed the 7% limit in *City Planning Code* Section 204.5; therefore, a Conditional Use authorization from the City Planning Commission would be required for the approximately 5,280 gsf of parking in excess of 7%.

Several objectives and policies of the *San Francisco Master Plan* apply to the project. They will be considered during the Annual Limit review process.

Objective 2 of the Commerce and Industry Element of the *Master Plan*, "maintain and enhance a sound and diverse economic base and fiscal structure for the City," and Objective 2 of the *Downtown Plan*, "maintain and improve San Francisco's position as prime location for financial and administrative, corporate and professional activity" would apply to the project, because the project would provide space for office activities. Objective 6 of the Commerce and Industry Element, to support San Francisco as a "prime location for financial and administrative, corporate and professional activity," would apply because the project would continue growth of downtown office activity.

Policy 2 of Objective 6 of the Commerce and Industry Element which guides "office development to maintain a compact downtown core so as to minimize displacement of other viable uses," would apply to the project in that it would be development within the Financial District. However, other viable uses could be displaced, to the extent that existing uses on the site would have to leave and could not relocate there. Policy 4 of Objective 6 of the Commerce and Industry Element to provide "amenities for those who live, work and use the Downtown" would apply to the project, which would provide an increase in retail space and open space on-site.

Zoning and plans will not be addressed further in the EIR

B. ENVIRONMENTAL EFFECTS

1) Land Use. Could the project:	Yes	No	Discussed
*(a) Disrupt or divide the physical arrangement of an established community?	___	X	X
*(b) Have any substantial impact upon the existing character of the vicinity?	___	X	X

The project site is located in the northwest corner of the Financial District; the area is characterized by buildings of various uses, ages and sizes. The project would expand office and retail uses, reconfigure and expand underground parking uses and increase open space uses on the block. The proposed 10-story Transamerica III building would replace three existing buildings: an eight-story building with about 57,200 gsf of office space; a four-story building with about 22,500 gsf of office space and 2,050 gsf of retail space; and a one-story building with about 1,100 gsf of retail space. The project would complete the conversion of the Transamerica block to post-1970 high-rise office / retail buildings around the Redwood Park open space in the center of the proposed project block. Uses would be similar to those of other high-rise office-retail buildings in the Financial District. While land use on the site would not change, more details on the surrounding land uses and the project site will be provided in the EIR as background for the reader.

2) Visual Quality. Could the project:	Yes	No	Discussed
*(a) Have a substantial, demonstrable negative aesthetic effect?	___	X	X
(b) Substantially degrade or obstruct any scenic view or vista now observed from public areas?	X	___	X
(c) Generate obtrusive light or glare substantially impacting other properties?	___	X	X

The project's design, appearance and possible effects on views will be evaluated in the EIR. The project would not use mirrored or reflective glass. Glare, therefore, will not be discussed in the EIR.

The project's relationship to the objectives and policies of the Urban Design Element of the *Master Plan* will be addressed in the EIR.

3) Population. Could the project:	Yes	No	Discussed
*(a) Induce substantial growth or concentration of population?	__	X	X
*(b) Displace a large number of people (involving either housing or employment)?	__	X	X
(c) Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	__	X	X

Of the 2,580 persons now employed on the Transamerica block, approximately 50 persons, or 2%, are employed on the Transamerica III site in retail and office uses. With the project, about 35 persons would be employed by the retail uses on the site and about 510 persons by the office uses./1/ About one-third to one-half, or 165 to 255, of the Transamerica III office employees would be employed by the project sponsor or its affiliates. This net increase of about 450 jobs on the site would constitute about 17% of the projected employment on the block.

The project would generate a demand for about 22 housing units in San Francisco according to the Office Affordable Housing Production Program (OAHPP) formula. The project would comply with the Office Affordable Housing Production Program, Section 313 of the *City Planning Code*, requiring the provision of 22 units or payment of an in-lieu fee of about $382,000. Transamerica proposes to sponsor a non-profit housing project in the project vicinity to comply with OAHPP requirements. The project would not create a substantial demand for additional housing in San Francisco, nor would the project reduce the housing supply. No housing would be displaced by the project.

Cumulative employment effects and the resultant housing demand are discussed in the *Mission Bay EIR* and *South of Market EIR*./2,3/ As explained in those EIRs, regardless of the type of development in Mission Bay and South of Market, the importance of San Francisco employment as a factor affecting regional housing demand will decline over time, because more housing is expected to be added in the City relative to job growth than in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. San Francisco workers would require about the same share of the region's housing in the future as they did in the early 1980s. San Francisco's effects on the regional housing market will vary in the future. City workers could become more important to the housing market in some close-in communities in western parts of the East Bay and east of the hills along BART corridors, in northern San Mateo County and parts of Marin.

The project-generated housing demand, from the additional 113,500 net gsf of office space and 8,600 net gsf of retail space, would be too small to contribute significantly to the San Francisco or regional housing demand./1/ Population and housing will not be analyzed further in the EIR.

NOTES - Population and Housing

/1/ The project would contain a total of about 12,600 gsf of retail space and about 136,000 gsf of office space. Based on the *Downtown Plan EIR* average of 268 square feet per office employee in the C-3 District and 350 square feet per retail employee, about 545 persons would be employed in new building. (Department of City Planning, *Downtown Plan Final EIR*, EE 81.3E, IV.B.1-47, certified October, 1984. Copies may be examined in the Department of City Planning offices, at the San Francisco Main Library and at various branch libraries.)

/2/ Department of City Planning, *Mission Bay EIR*, EE86.505, Vol. II, pp. VI.B.50-79, certified August 23, 1990. Copies may be examined in the Department of City Planning offices, at the San Francisco Main Library and at various branch libraries.

/3/ Department of City Planning, *South of Market Plan EIR*, EE85.463E, Vol. II, pp. 66-95, certified December 7, 1990. Copies may be examined in the Department of City Planning offices, at the San Francisco Main Library and at various branch libraries.

4) Transportation/Circulation. Could the project:	Yes	No	Discussed
*(a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	X	___	X
*(b) Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	X	___	X
(c) Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	___	X	X
(d) Cause a substantial increase in parking demand which cannot be accommodated by existing or proposed parking facilities?	___	X	X

Increased population at the site would increase demand on existing transportation systems. The number of pedestrians in the area would also increase. The project could alter local circulation patterns during construction and operation. These effects will be evaluated in the EIR.

Project trip generation will be addressed in the EIR. Existing and proposed parking and loading will be evaluated in the EIR. Local transportation effects, including effects on Muni service, traffic and parking, will be analyzed in the EIR. Project effects, as they relate to cumulative impacts, will also be discussed in the EIR.

5) Noise. Could the project:	Yes	No	Discussed
*(a) Increase substantially the ambient noise levels for adjoining areas?	X		X
(b) Violate Title 24 Noise Insulation standards, if applicable?		X	X
(c) Be substantially impacted by existing noise levels?		X	X

Demolition, excavation and project construction would temporarily increase noise in the project vicinity. Construction would take about 18 to 24 months and would include about four to eight weeks of pile driving. Project construction noise and vibration and possible effects on sensitive receptors will be addressed in the EIR.

The noise environment of the site, like all of downtown San Francisco, is dominated by vehicular traffic noise. The *Downtown Plan EIR* indicates a day-night average noise level (L_{dn}) in 1984 of 72 dBA on Sansome Street and the Environmental Protection Element of the *Master Plan* indicates an L_{dn} of 65 dBA on Washington Street in 1974./1,2,3/ The Environmental Protection Element of the *Master Plan* contains guidelines for determining the compatibility of various land uses with different noise environments. For noise levels between 65 dBA and 75 dBA, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise reduction measures in the building design. The project sponsor has indicated that noise reduction measures would be incorporated into the building design.

Project operation would not result in noise levels perceptibly greater than those that exist in the project area. The amount of traffic generated by the project during any hour of the day and cumulative traffic increases by the time of project completion would cause traffic noise levels to increase by one dBA or less. To produce a noticeable increase in environmental noise, a doubling of existing traffic volume would be required./4/ Traffic increases of this magnitude would not occur with expected development, including the project.

The project would be required to comply with the San Francisco Noise Ordinance, *San Francisco Police Code* Section 2909, Fixed Source Noise Levels, which regulates mechanical equipment noise. The project site and surrounding area are within a C-3-0 District. In this district, the ordinance limits equipment noise levels at the property line to 70 dBA between 7 a.m. and 10 p.m. and to 60 dBA between 10 p.m. and 7 a.m. During lulls in traffic, mechanical equipment generating 60 dBA could dominate the noise environment at the site.

Because the project does not include housing, noise standards in Title 24 of the *California Code of Regulations* would not be applicable. Operational noise, therefore, requires no further analysis in the EIR.

NOTES - Noise

/1/San Francisco Department of City Planning, *Downtown Plan Environmental Impact Report* (EIR), EE81.3, certified October 18, 1984, Vol. 1, Table IV.J.2.

/2/dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to the range of frequencies of sound. L_{dn}, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance caused by nighttime noises; noise between 10 pm and 7 am is weighted 10 dBA higher than daytime noise.

/3/San Francisco Department of City Planning, *Environmental Protection Element of the Master Plan*, 1974, p. I.6.15.

/4/Cunniff, Patrick F., Environmental Noise Pollution, John Wiley and Sons, 1977, pp. 31-33.

6) Air Quality/Climate. Could the project:	Yes	No	Discussed
*(a) Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	__	X	X
*(b) Expose sensitive receptors to substantial receptors to substantial pollutant concentrations?	__	X	X
(c) Permeate its vicinity with objectionable odors?	__	X	X
(d) Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	X	__	X

Two types of air quality impacts could be expected from the proposed project: long term impacts related to use and operation of the project, and short term impacts from construction activity. Cumulative downtown traffic can be expected to contribute to existing air pollution near the project site. The net new vehicle trips generated by operation of the project would not contribute measurably to cumulative air quality effects; the new vehicle trips, about 320 daily trips, would be below the 2,000 trips per day threshold in the Bay Area Air Quality Management District (BAAQMD) guidelines for an air quality analysis./1/ A Modified Linear Rollback Analysis was conducted for the total trips to the site. This analysis indicated no significant air quality impacts would result from the project./2/ Operational air quality effects of the project require no further analysis in the EIR.

Construction activities would temporarily affect local air quality. Demolition, grading and other construction activities would not involve burning of any materials, and would not create objectionable odor. Construction dust consists primarily of large particles that settle out of the atmosphere more rapidly with increasing distance from the source. More of a nuisance than a hazard for most persons, this dust could affect persons with respiratory diseases. The dust could also affect sensitive electronics or communications equipment. Mitigation measures are included to reduce dust emissions (see p. 28).

Diesel-powered equipment would emit, in decreasing order by weight, nitrogen oxides, carbon monoxide, hydrocarbons and particulates (including PM_{10}, a pollutant for which BAAQMD reports that the San Francisco area violates published standards). These emissions would increase local concentrations temporarily, but would not be expected to increase the frequency of violations of air quality standards. The project sponsor would require the project contractor to maintain and operate construction equipment in such a way as to minimize exhaust emissions (see p. 28). Construction air quality effects require no further analysis in the EIR.

The cumulative effects on air quality of traffic emissions from traffic generated by development in the Downtown & Vicinity including the project are analyzed in the *Mission Bay EIR* and *South of Market Plan EIR*. The cumulative analysis in the *Mission Bay EIR* and *South of Market Plan EIR* regarding air quality will be incorporated by reference and the project effects in relation to cumulative effects will be discussed. The analysis and conclusions of these EIRs remain current regarding future and project conditions.

Potential shadowing impacts of the project on adjacent historic structures, sidewalks, parks and other open spaces will be discussed in the EIR. The analysis will include shadow diagrams.

Section 148 of the *City Planning Code* establishes comfort criteria of 11 mph equivalent wind speed for pedestrian areas and seven mph for seating areas, not to be exceeded more than ten percent of the time, year-round between 7:00 a.m. and 6:00 p.m. Project wind effects including the results of wind tunnel testing and the effects of the project in relation to the *City Planning Code* criteria, will be discussed in the EIR.

NOTES - Air Quality / Climate

/1/Bay Area Air Quality Management District, *Air Qualfity and Urban Development: Guidelines for Assessing Impacts of Projects and Plans,* Table III-A-1, "Thresholds for Submission of Environmental Documents," November 1985.

/2/The air quality analysis is on file and available for public review at the Department of City Planning, 450 McAllister Street, 6th Floor.

7) Utilities/Public Services. Could the project:	Yes	No	Discussed
*(a) Breach published national, state or local standard relating to solid waste or litter control?	__	X	__
*(b) Extend a sewer trunk line with capacity to serve new development?	__	X	__
(c) Substantially increase demand for schools, recreation or other public facilities?	__	X	__
(d) Require major expansion of power, water, or communications facilities?	__	X	__

The *Downtown Plan EIR* concluded that demand for public services and utilities resulting from development in the C-3 districts under the *Downtown Plan* would not be significant. The project would fall within this development forecast. This *Downtown Plan EIR* analysis remains current and valid for future and project conditions. The *Downtown Plan EIR* (EE81.3, Final EIR certified October 18, 1984) may be examined at the Department of City Planning, 450 McAllister Street, the San Francisco Main Library and various branch libraries. This topic requires no further analysis in the EIR.

8) Biology. Could the project:	Yes	No	Discussed
*(a) Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	__	X	X
*(b) Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	__	X	X
(c) Require removal of substantial numbers of mature, scenic trees?	X	__	X

Because the Transamerica III building site is now covered by impervious surfaces, construction would not affect plant or animal habitats. No rare or endangered species would be affected by the project. The redesign of Redwood Park, including the removal of some of the redwood trees and street trees and their replacement with other trees, will be addressed in the EIR.

9) Geology/Topography. Could the project:	Yes	No	Discussed
*(a) Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction).	___	X	X
(b) Change substantially the topography or any unique geologic or physical features of the site?	___	X	X

The elevation at the site is about three feet, San Francisco City Datum (SFD)./1/ The site is underlain by about 20 feet (from present grade) of loose to compact fine sand fill, containing scattered construction debris./2/ The fill is underlain by clay and clayey sand. Bedrock is probably between 100 and 150 feet below the ground surface. Groundwater is expected to be about 12 feet below grade.

Excavation for the project foundation and one underground parking level would be to a depth of about -3 feet SFD, or about 11 feet below grade. A driven pile foundation would be required for the project. Dewatering to lower the water table by at least 10 feet would be required during excavation of the loading area. Dewatering could cause some settlement of nearby buildings. Additionally, lowering the water table could cause wooden piles which support older buildings in the site vicinity to be exposed to the air, possibly causing premature decay. Measures to mitigate dewatering impacts would be included as part of the project (see p. 28).

A geotechnical investigation would be made for the project, and a detailed geotechnical report would be prepared by an engineering geologist licensed in California prior to commencement of construction. The report would be reviewed by the Bureau of Building Inspection (BBI) prior to issuing a building permit as part of the routine plan check function. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project. Site specific geologic concerns will not be discussed in the EIR.

The primary seismic hazard at the site is strong ground shaking resulting from earthquakes on nearby faults. The *Downtown Plan EIR* includes information on seismic safety issues in the C-3 District of downtown. That information remains current./3/ The *South of Market Plan EIR* provides similar information for that area, as does the *Mission Bay EIR* for its project area./4,5/ These EIRs do not provide any new data about seismic issues that establish a need for revisions in the *Downtown Plan EIR* information or conclusions. A summary of this information will be included in the EIR.

NOTES - Geology / Topography

/1/San Francisco City Datum establishes the City's "0" (zero) point for surveying purposes at approximately 8.6 feet above mean sea level.

/2/Harding Lawson Associates, Preliminary Soil Investigation Transamerica III, Washington and Sansome Streets, San Francisco, California, February 6, 1990. The report is on file and available for public review at the Department of City Planning, 6th Floor, 450 McAllister Street, San Francisco.

/3/Department of City Planning, Downtown Plan EIR (EE81.3, Final EIR certified October 18, 1984), pp. IV.K.1-17a, may be examined at the Department of City Planning, 6th Floor, 450 McAllister Street, San Francisco.

/4/Department of City Planning, *South of Market Plan EIR* (EE85.463E, Final EIR certified December 7, 1989), pp. 154-174, may be examined at the Department of City Planning, 6th Floor, 450 McAllister Street, San Francisco.

/5/Department of City Planning, *Mission Bay EIR* (EE86.505, Final EIR certified August 23, 1990), Vol. II, pp. VI.K.11-15 and 33-43, may be examined at the Department of City Planning, 6th Floor, 450 McAllister Street, San Francisco.

10) Water. Could the project:	Yes	No	Discussed
*(a) Substantially degrade water quality, or contaminate a public water supply?	___	X	X
*(b) Substantially degrade or deplete ground-water resources, or interfere substantially with groundwater recharge?	___	X	X
*(c) Cause substantial flooding, erosion or siltation?	___	X	X

The site is currently covered with impervious surfaces and Redwood Park. The project would cover the site with a building and paved surfaces. The project would decrease the amount of permeable surfaces in the City by a small amount with the construction of the Transamerica III parking garage under the northeastern portion of Redwood Park. No water quality impacts would result. The project would not alter the drainage pattern of the site. Site runoff would drain into the City's combined sanitary and storm drainage system. This topic will not be discussed in the EIR.

11) Energy/Natural Resources. Could the project:	Yes	No	Discussed
*(a) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use them in a wasteful manner?	___	X	X
(b) Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	X

The site is now occupied by three buildings: 501-505 Washington Street, 517 Washington Street and 545 Sansome Street. Annual energy consumption of the present uses is estimated to have been about 431,000 kWh of electricity and about 176 million Btu of natural gas at the source in 1989./1,2/

Project demand for electricity during PG&E's peak electrical load periods, July and August afternoons, would be about 700 kW, an estimated 0.0045% of PG&E's peak load of 16,000 MW./3/ Project demand for natural gas during PG&E's peak natural gas load periods, January mornings, would be about 10,000 cubic feet per day, or about 0.0003% of PG&E's peak load of about 4.7 billion cubic feet per day./3,4/ Projected electricity and natural gas consumption are summarized in Table 1; peak and annual electric and natural gas demand are illustrated in Figures 3 and 4, pp. 21 and 22.

New buildings in San Francisco are required to conform to energy conservation standards specified by Title 24 of the *California Code of Regulations*. Documentation showing compliance with these standards would be submitted with an application for a building permit. Compliance is enforced by the Bureau of Building Inspection.

Projections of electrical use for growth that would occur in the C-3 district under the *Downtown Plan*, as analyzed in the *Downtown Plan EIR*, indicate an increase of about 330-350 million kWh per year between 1984 and 2000, as a result of all new development forecast to be built and occupied in the C-3 district. Natural gas consumption is expected to increase by 470 million cu. ft. (about five million therms) per year during the same time period, of which 210 million cu. ft. (about two million therms) per year would be for office uses. These figures may be somewhat overestimated, because employment and growth forecast in the Downtown Plan EIR for the C-3 district were somewhat larger than is now expected based on more recent trends (see *Mission Bay EIR*, Vol. II, pp. VI.B.50-79). Increased San Francisco energy demands through 2000 would be met by PG&E from a variety of sources: nuclear, oil, gas, hydroelectric, geothermal, cogeneration, wind and imports. PG&E plans to continue to receive most of its natural gas from Canada and Texas under long-term contracts.

TABLE 1: PROJECTED PROJECT ENERGY USE /a,e/

Daily Natural Gas Consumption/b/

Estimated natural gas consumption per sq. ft.	21.1 Btu/c/
Estimated peak daily gas consumption	111.0 Therms

Monthly Electrical Consumption/b/

Estimated electrical consumption per sq. ft.	1.9 kWh (19,500 Btu)/d/
Estimated total electrical consumption	278,000 kWh (2.85 billion Btu)

Annual Consumption

Estimated total annual natural gas consumption	13,700 Therms (1.37 billion Btu)
Connected kilowatt load	1,960 kW
Estimated total annual electrical consumption	3.34 million kWh (34.2 billion Btu)
Estimated total annual energy consumption	35.6 billion Btu (6.35 barrels of oil)

/a/ Energy use includes space conditioning, service water heating and lighting in accordance with allowable limits under Title 24. Estimated electricity includes an additional three kWh/sq. ft./yr., consumed by appliances such as typewriters, computers, coffee makers, etc., than assumed by Title 24 estimates.

/b/ Electricity and natural gas consumption were based on estimates provided by Skidmore, Owings and Merrill, Architects/Engineers (memorandum, February 6, 1990). These calculations are available for review at the Department of City Planning, 450 McAllister Street.

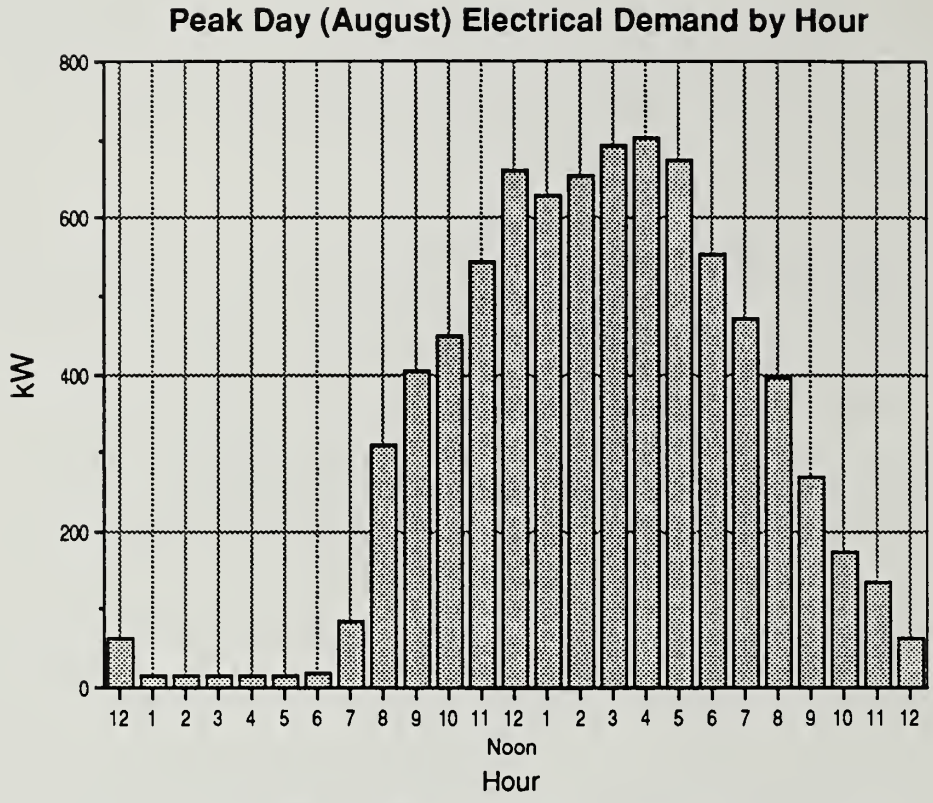
/c/ Btu (British thermal unit) is a standard unit for measuring heat. Technically, one Btu is the quantity of heat required to raise the temperature of one pound of water 1 degree Fahrenheit at sea level (251.97 calories).

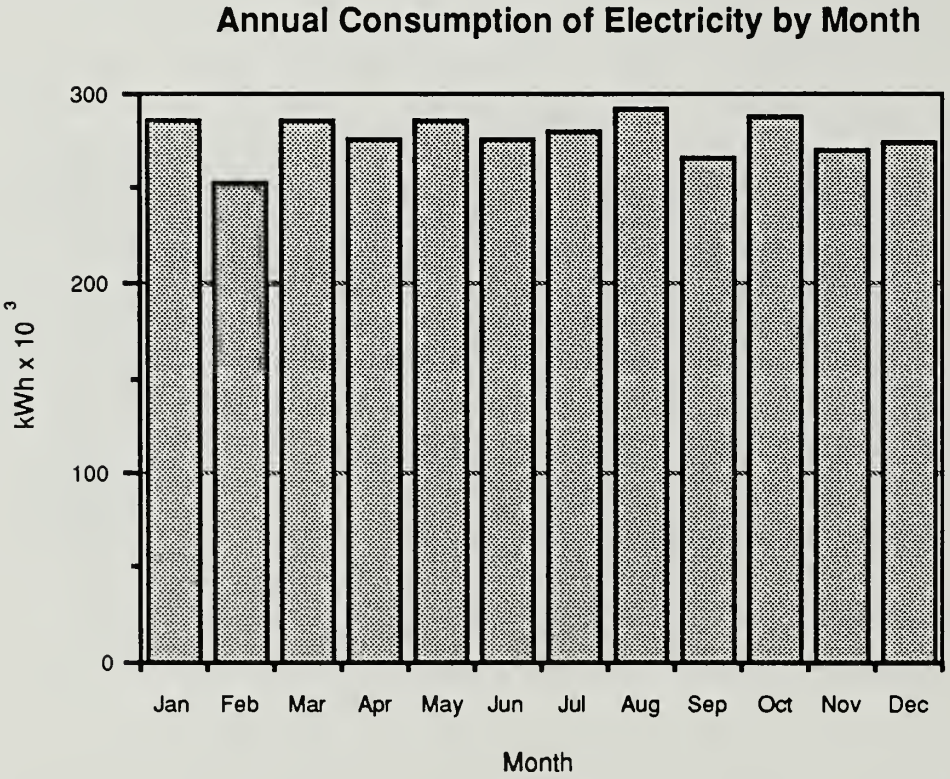
/d/ Energy Conversion Factors:

one gallon gasoline	= 125,000 Btu
one kilowatt (kW)	= 10,239 Btu
one therm	= 100,000 Btu
one barrel oil	= 5,600,000 Btu

/e/ Monthly and annual figures may not match as a result of rounding to three significant digits.

SOURCE: Skidmore, Owings and Merrill, and Department of City Planning.

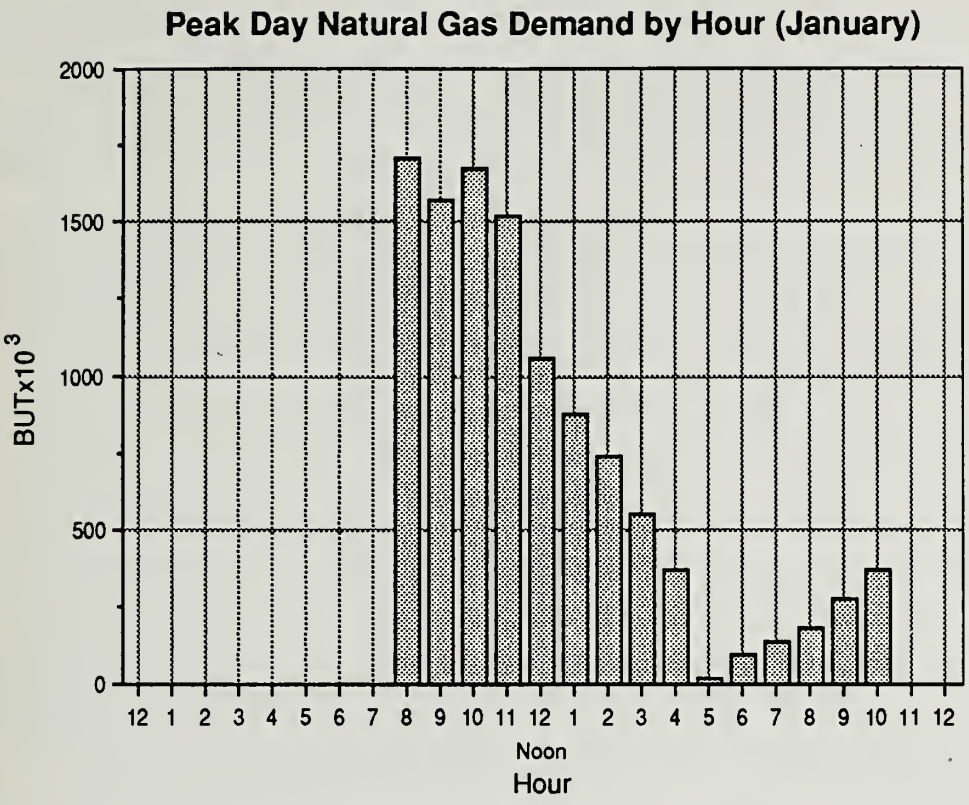


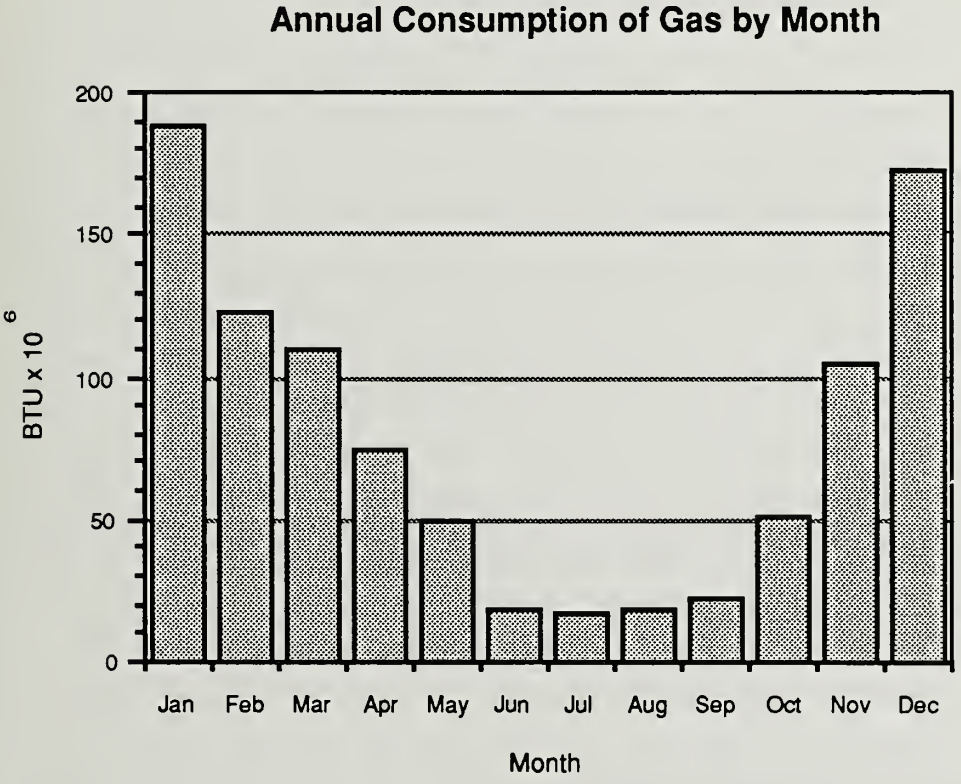


Transamerica III ■

SOURCE: Environmental Science Associates, Inc.

Figure 3
Projected Electrical Load
Distribution Curves





SOURCE: Environmental Science Associates, Inc.

Transamerica III ■

Figure 4
Projected Natural Gas
Distribution Curves

TABLE 2: PROJECT-RELATED ANNUAL TRANSPORTATION ENERGY CONSUMPTION IN 2000/a/

	Electricity Thousands (of kWh)	Gasoline Thousands (of Gallons)	Diesel Thousands (of Gallons)	Total Btu (Billion)
Auto/Taxi/Jitney/Motorcycle/ Charter Bus	--	42.7	--	6.0
BART	549.4	---	--	5.6
Muni Electric	333.6	--	--	3.4
Regional Bus Systems	--	--	11.9	1.9
SPRR	--	--	2.1	0.5
Project Total	882.9	42.7	14.8	17.4

/a/ The methods used to calculate these figures are described in detail in the *Downtown Plan EIR*, EE81.3, certified November 18, 1984, in Appendix N. The associated data is contained in Table 6 of that document. Calculations are also based, in part, on vehicle miles travelled (see calculations for the project on file at the Department of City Planning, Office of Environmental Review, 450 McAllister Street).

SOURCE: Environmental Science Associates, Inc.

Project-related transportation would cause additional, off-site energy consumption. Annual project-related trips (about 98,500 auto vehicle trip ends [vte], 137,000 bus person trip ends [pte], 12,700 train pte, 8,200 ferry pte, 10,900 jitney / van / taxi / motorcycle / charter bus pte, 183,000 BART pte, and 213,000 Muni electric pte) would require about 58,000 gallons of gasoline and diesel fuel, and about 883,000 kWh of electricity annually, as indicated in Table 2 above. These figures were calculated based on data contained in the *Downtown Plan EIR*. The total annual transportation energy demand, converted with at-source factors to a common thermal energy unit, would be about 17.4 billion Btu, the energy equivalent of about 3,100 barrels of oil. This projected use is based upon the mix of highway vehicles in California in 1987. Vehicle fuel consumption is expected to decrease as the vehicle fleet becomes more efficient and fuel more expensive.

The *Downtown Plan EIR* (pp. IV.G.5 - IV.G.19) concluded that energy consumption resulting from development in the C-3 district under the *Downtown Plan* would not be significant and that conclusion remains valid for the future and project conditions. This topic, energy impacts, requires no further analysis and will not be discussed in the EIR.

NOTES - Energy

/1/ For 517 Washington Street and 545 Sansome Street, existing electrical energy and natural gas use are based on information received from Transamerica Realty Services. Energy consumption at 501-505 Washington Street was estimated using PG&E Data Form E-3.2C.

/2/ The British thermal unit (Btu) is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level; all references to Btu in this Initial Study are at-source values. The term "at-source" means that adjustments have been made in the calculation of the thermal energy equivalent (Btu) for losses of energy that occur during generation, transmission, and distribution of the various energy forms as specified in: ERCDC, 1977, *Energy Conservation Design Manual for New Non-Residential Buildings*, Energy Conservation and Development Commission, Sacramento, California, and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, *Energy and Transportation System*, California Department of Transportation, Sacramento, California, Project #20-7, Task 8.

/3/ Department of City Planning, *Downtown Plan EIR* (EE81.3, Final EIR certified October 18, 1984) may be examined at the Department of City Planning, 450 McAllister Street (see Vol. 1, pp. IV.G.3-4.)

/4/ One cubic foot of natural gas = 1,100 Btu.

12) Hazards. Could the project:	Yes	No	Discussed
*(a) Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	X
*(b) Interfere with emergency response plans or emergency evacuation plans?	___	X	X
(c) Create a potentially substantial fire hazard?	___	X	X

Asbestos-containing materials could be found within the three existing buildings on site, which are proposed to be demolished as part of the project. Any demolition of the existing buildings necessary for the project must comply with State law which requires, where there is asbestos-related work involving 100 square feet or more of asbestos-containing materials, that a contractor be certified and that certain procedures be followed./1/ The project sponsor would have the project contractor conform to state regulations for the removal of toxic materials in the existing structures. The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition./2/ The District randomly inspects removal operations. In addition, the District inspects any removal operations concerning which a complaint has been received.

The local office of the State Occupational Safety and Health Administration (OSHA) must also be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in 29 CFR 1926.58. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the properties where demolition and renovation would occur must have a Hazardous Waste Generator Number assigned by, and registered with, the California Department of Health Services in Sacramento. The contractor and the hauler of the material are required to file a Hazardous Waste Manifest which details the hauling of the material from the site and the disposal of the material. Once constructed, the project would not create a health hazard or be affected by hazardous uses.

The project is in the "Maher" district, i.e., eastward of the historic San Francisco Bay tide line. The City has adopted an ordinance (Ordinance 253-86, signed by the Mayor on June 27, 1986) which requires analyzing soil for hazardous wastes within specified areas. The ordinance specifically includes sites, such as the project site, which are bayward of the high tide line (as shown on maps available from the Department of Public Works [DPW]).

Under this hazardous soils ordinance, where hazardous materials are found, the sponsor would be required to submit a site mitigation plan (SMP) certified by a qualified expert. Prior to the issuance of any building permit, DPW would have to receive confirmation (through the Director of Public Health) that either no SMP was required, or that a certified SMP had been implemented. In light of the above, the project would not create a potential public health hazard through the production or disposal of harmful materials.

The project would increase the daytime population in downtown San Francisco. Employees in the proposed building would contribute to congestion, if an emergency evacuation of the downtown area were required. An evacuation and emergency response plan would be developed as part of the proposed project (see page 29). The project's emergency plan would be coordinated with the City's emergency planning activities. This mitigation measure is part of the project.

NOTES - Hazards

/1/ Assembly Bill 2040, Asbestos 1985, Added Section 24223 and Chapter 25 to Division 20 of the Health and Safety Code.

/2/ Bay Area Air Quality Management District, *Rules and Regulations.* Regulation 11, Rule 2, adopted May 1981.

13) Cultural. Could the project:	Yes	No	Discussed
*(a) Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historical or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	X	__	X
(b) Conflict with established recreational, educational, religious or scientific uses of the area?	__	X	__
(c) Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?	__	X	X

Subsurface cultural resources could be encountered on the site during excavation for the Transamerica III foundation and basement, and construction of new parking area below Redwood Park, between Transamerica III and the Pyramid. Subsurface cultural resources will be analyzed in the EIR.

None of three buildings that occupy the Transamerica III site (517 Washington Street, built in 1910; 501-505 Washington Street, built in 1975; and 545 Sansome Street, built in 1930) are designated as City Landmarks under Article 10 of the *City Planning Code*, as Significant or Contributory Buildings in the C-3 districts under Article 11 of the City Planning Code, or are on the National Register of Historic Places. The project site is not within an Article 10 Historic District, or an Article 11 Conservation District. The project would not directly affect architectural resources in the Jackson Square Historic District, which begins north of Washington Street, across from the project block. The 545 Sansome Street building was rated by the Foundation for San Francisco's Architectural Heritage (Heritage) as "C" in 1979. Buildings rated "A," "B," "C," and "D" by Heritage were included in a comprehensive review of over 500 buildings in the C-3 District that were considered, during preparation of the Downtown Plan, for some type of preservation status based on historic and architectural merit. The ultimate list proposed by the Department included many buildings on each of four lists, with those rated Category I and II designated for special preservation rules, and those rated Category III and IV with somewhat less stringent requirements (*City Planning Code* Article 11). These designations were reviewed by the Landmarks Preservation Advisory Board and by the City Planning Commission in public hearings before both bodies, and adopted by the Board of Supervisors. That process included many opportunities to add to, or subtract from, the

various categories. Article 11 of the *City Planning Code* provides for a procedure for changing the various designations. The 545 Sansome Street building was not included in any of the lists of categories of buildings adopted by the Board of Supervisors and has not been added since the first Board action on the Downtown Plan in 1985.

The downtown building rating system was based on a detailed and systematic review and analysis on the part of Department staff, public officials, and members of the public. This process is a reasonable basis for establishing a standard of significance. Not all buildings designed by the office of a prominent architect are necessarily worthy of preservation or considered significant. Thus, the absence of the 545 Sansome Street building on the lists of Category I, II, III and IV buildings provides a basis for determining that there would be no significant effect as a result of proposed demolition. Architectural resources will not be analyzed in the EIR.

C. OTHER	Yes	No	Discussed
Require approval and/or permits from City Departments other than Department of City Planning or Bureau of Building Inspection, or from Regional, State, or Federal Agencies?	__	X	X

The project would require approvals or permits from the Department of City Planning and the Bureau of Building Inspections. No approvals or permits from other agencies would be necessary.

D. MITIGATION MEASURES	Yes	No	N/A	Discussed
1) If any significant effects have been identified, are there ways to mitigate them?	X	__	__	X
2) Are all mitigation measures identified below included in the project?	X	__	__	X

For informational purposes, the following provides a summary of actions included in the project which would eliminate potential project geotechnical impacts or reduce them to a level of insignificance.

- If dewatering were necessary, the final soils report, to be submitted to the Bureau of Building Inspection of the Department of Public Works and the Landmarks Preservation Advisory Board, would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey were recommended, the DPW would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor the level of the water table and other instruments would be used to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt this settlement. The project sponsor would delay construction if necessary. Cost for the survey and any necessary repairs to service under the street would be borne by the project sponsor. If lowering of the groundwater table were to threaten wooden pile foundations, groundwater recharge would be used to stabilize the groundwater level.

  The final soils report would also recommend whether or not watering of piles of adjacent structures were necessary. If watering were found to be necessary, the project sponsor would ensure that the general contractor complied.

The following are mitigation measures related to topics determined to require no further analysis in the EIR. The EIR will contain a mitigation chapter describing these measures and other measures which would be, or could be, adopted to reduce potential adverse effects that would result from the project and are identified in the EIR .

Operational Noise

- As recommended by the Environmental Protection Element of the San Francisco Master Plan, an analysis of noise reduction measurements would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features could include fixed windows and climate control.

Air Quality

- The project sponsor would require that the general contractor sprinkle demolition areas with water continually during demolition activity; sprinkle unpaved construction areas with water at least twice per day to reduce dust generation by about 50%; cover stockpiles of soil, sand, and other materials; cover trucks hauling debris, soils, sand or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulate and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, or implementation of specific maintenance programs (to reduce emissions) for equipment that would be in frequent use for much of the construction period.

Hazards

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project plan would be reviewed by the Office of Emergency Services and implemented by building management, insofar as feasible, before issuance by the Department of Public Works of final building permits.

  To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

E. ALTERNATIVES

Alternatives to the proposed project would include the following:

A. No Project Alternative

B. Reduced Shadow Impacts Alternative

C. Reduced Parking (No Conditional Use Authorization Required) Alternative

D. No Parking / No Redwood Park Expansion Alternative

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plants or animal, or eliminate important examples of the major periods of California history or pre-history?	___	X	___
*2) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3) Does the project have possible environmental effects which are individually limited, but cumulatively considerable. (Analyze in the light of past projects, other current projects, and probable future projects.)	X	___	X
*4) Would the project cause substantial adverse affects on human beings, either directly or indirectly?	___	X	___

The project would contribute to cumulative impacts of downtown development, particularly transportation. Applicable cumulative impacts will be discussed in the EIR.

G. ON THE BASIS OF THIS INITIAL STUDY

___ I find that proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigations measures, numbers ____ , in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

_X_ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Barbara W. Sahm

BARBARA W. SAHM
Environmental Review Officer
for

DEAN L. MACRIS
Director of Planning

DATE: October 3, 1990

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

APPENDIX B: WIND STUDY METHODOLOGY

This summary of wind study methodology is based on a report by Bruce R. White, Ph.D., Professor of Mechanical Engineering at the University of California, Davis. The study is independent of the University. The report is available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street.

INTRODUCTION

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to four mph have no noticeable effect on pedestrian comfort. With winds from four to eight mph, wind is felt on the face. Winds from eight to thirteen mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. For winds from 19 to 26 mph, the force of the wind will be felt on the body. At 26 to 36 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over.

Wind-tunnel tests were conducted for winds in the project vicinity in its existing condition (including all approved development) and with the project in the existing scenario, both in relation to the Downtown Plan wind performance criteria (adopted by the City Planning Commission, November 29, 1984). Wind-tunnel measurements and existing weather records for San Francisco were used to predict equivalent mean wind speeds near the project site./1/ These mean wind speeds were compared to comfort criteria of 11 mph for pedestrian areas and seven mph for sitting areas, each not to be exceeded more than ten percent of the time. Separate calculations were also done to evaluate compliance with the hazard criteria that hourly average wind speeds may not reach or exceed 26 mph for one hour per year.

A one inch = 50 feet scale model of the downtown San Francisco area surrounding the proposed building for several blocks in all directions was provided by ESA. The model was tested in four configurations: the existing setting, the project plus existing, a 120-foot alternative plus existing, and a maximum height alternative plus existing.

The model was tested in a wind tunnel that allows testing of natural atmospheric boundary layer flow past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 feet), a test section of 1.22 m (4 feet) wide by 1.83 m (6 feet) high, and an adjustable false ceiling. The adjustable ceiling and turbulence generators allow speeds within the tunnel to vary from one to eight meters per second (m/s), or 2.2 to 17.9 miles per hour (mph).

Wind-speed measurements were made with a hot-wire anemometer, an instrument that directly relates rates of heat transfer to wind speeds by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (changes in wind speeds over short periods of time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of plus or minus (±) five percent of the true values. The ratio of near-surface speed to reference wind speed was calculated from the hot-wire measurements.

Twenty-two test locations were studied for three prevailing wind directions (northwesterly, west-northwesterly, and westerly) for the four configurations. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation proposed. All hot-wire measurements were taken at the same series of surface points around the building site for the three wind directions and the four cases.

METHODOLOGY AND ASSUMPTIONS

The *City Planning Code* Section 148, Reduction of Ground-Level Wind Currents in C-3 Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the *Code* requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single hour of the year, or 0.011416% of the time. The 7 mph and 11 mph comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the 26 mph hazard criterion is based on wind speeds that are measured for one hour and averaged; this is equivalent to a one-minute average of 36 mph.

The wind ordinance is defined in terms of equivalent wind speed. This term denotes an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence.

The mean wind speeds at street level were determined by a wind-tunnel test and a comparison of the test results with statistically representative records of wind data collected atop the Old Federal Building. Data describing the speed, direction, and frequency of occurrence of winds were gathered at the old San Francisco Federal Building, at 50 United Nations Plaza, during the six-year period 1945 to 1950. Measurements taken hourly and averaged over one-minute periods have been tabulated for each month (averaged over the six years) in three-hour periods using seven classes of wind speed and 16 compass directions. Analysis of these data shows that during the hours from 6:00 a.m. to 8:00 p.m., about 62 percent of the winds blow from four of the 16 directions, as follows: Northwest (NW), 10 percent; West Northwest (WNW), 14 percent; West (W), 35 percent; West Southwest (WSW), 2 percent; and all other winds, 36 percent. Calm conditions occur two percent of the time.

Each wind-tunnel measurement results in a ratio that relates the speed of ground-level wind to the speed at the reference elevation, in this case the height of the Old San Francisco Federal Building. The frequency with which a particular wind velocity is exceeded at any test location is then calculated by using the measured wind tunnel ratios and a specified ground speed to determine the corresponding reference wind speed for each direction. In general, this gives different reference speeds for each direction (NW, WNW, W, WSW (included in wind-tunnel analyses of South-of-Market projects), and Other). The wind data for San Francisco are then used to calculate the percentage of the time that the specific ground-level wind speed is exceeded. The sum of these is the total percentage of time that the specified ground-level wind speed is exceeded. A computer is used to calculate the total percentages for a series of wind speeds until the speed exceeded ten percent of the time is found. Throughout the discussion of wind-tunnel results, the wind speeds reported refer to the equivalent wind speeds.

The wind data observed at the Old San Francisco Federal Building are not full hour average speeds as required by the code, so it is necessary to adjust the equivalent speeds to obtain the true hourly average of 26 mph./2/ The adjusted equivalent wind speeds were used to calculate compliance with the hazard criterion.

STUDY RESULTS

The locations of the measurement points and the result of the wind-tunnel study for compliance with the comfort criteria are summarized in Figure ---.

These results represent a wind-tunnel test carried out in March, 1990, and two additional tests carried out in December, 1990 and January, 1991. Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time, and about 0.01% of the time when referring to the hazard criterion./3/

Existing

Wind speeds in the existing setting range from 7 mph to 20 mph at the 22 locations tested. The comfort criterion for pedestrians is currently exceeded at nine of the 22 ground locations. The seven mph seating comfort criterion is exceeded under existing conditions within Redwood Park. Relatively strong winds with speeds from 12 mph to 20 mph occur along Washington Street from Montgomery Street to Battery Street, specifically near the intersection of Sansome and Washington Streets. Winds between 12 mph and 13 mph also occur on Clay Street midway along the project block between Montgomery and Sansome Street. The strongest existing wind, 20 mph, occurs on Washington Street approximately midway between Sansome and Battery Streets. The wind hazard criterion of 26 mph occurring for more than one hour annually is violated at this location. The major features that influence the near surface winds at the project site are topography and the presence of the Transamerica Pyramid, the Holiday Inn - Financial District, and the Montgomery - Washington Tower. Westerly to northwesterly winds approach the Pyramid and project site virtually unaffected by any other large buildings or other wind sheltering features.

Project Effects

The project would result in winds ranging from 8 mph to 22 mph. The project would cause wind speeds to decrease at eight of the 22 locations, remain the same at five locations, and increase at nine locations. Along Washington Street, excluding the intersection with Sansome Street, winds would increase by one to two mph at three locations and decrease by one to two mph at four locations. Along Sansome Street, excluding the intersection with Washington Street, winds would increase at two

locations and decrease at one location. Along Clay Street winds would decrease about two mph, and, as such, they would meet the pedestrian comfort criterion. At the intersection of Sansome and Washington Street, wind speeds would increase at three locations and decrease at one. The wind speed at the northern portion of Redwood Park would increase from 10 to 13 mph, thus exceeding the pedestrian comfort criterion. This increase could be the result of the reduced density of trees within the park.

The project would cause winds at one location, at the intersection of Clay Street with Sansome Street, to increase from 7 mph to 8 mph, thereby exceeding the seating area criterion. The pedestrian comfort criterion of 11 mph would be exceeded at seven locations in the project setting: in the northern portion of Redwood Park, on Washington Street midway between Sansome and Battery Streets, at the intersection of Sansome and Jackson Streets, at the intersection of Sansome and Washington Streets, and at the intersection of Washington and Montgomery Streets. The strongest wind would occur at a location midway between Sansome and Battery on Washington Street, where the 26 mph hazard criterion would continue to be exceeded. The project would not change this condition.

In summary, of 22 locations tested in the wind-tunnel study, there are nine locations where the pedestrian criterion is exceeded under existing conditions. With the project, there would be seven points at which the pedestrian criterion would be exceeded. One of these points, within Redwood Park, would change from meeting the criterion to exceeding the criterion. At three points along Washington Street and Clay Street on the project block, wind speeds would decrease to a level at or below allowable limits.

The project would require an exception to Section 148, as part of Section 309 review of the project, in order to establish the appropriateness of the comfort criteria exceedances described above.

Wind Hazard Analysis

As described above, relatively strong winds were measured near the intersection of Sansome and Washington Streets. Based on current methodology, the wind-tunnel results indicate two- to nine-hour-per-year exceedences of the 26-mph hazard criterion in both the existing setting and the project setting at test location 16, located midway between Sansome and Battery Streets along Washington Street. These exceedences are

the result of relatively steady, uniform ground-level winds, as compared with the highly turbulent, non-uniform winds usually associated with hazardous conditions./4/ Tests indicate that high-speed winds along Washington Street would most likely be caused by winds that blow from the west-northwest along Columbus Street until they impinge on the Transamerica Pyramid, the Holiday Inn - Financial District, and the Montgomery-Washington Tower, and are diverted to Montgomery and Washington Streets.

To characterize properly the west-northwest winds in regards to their potential for creating hazardous conditions. Two abbreviated wind-tunnel tests were carried out in December of 1990 and January of 1991, to verify the original results and document the variation in test results of higher velocity winds. Those tests addressed only the west-northwest wind and included a limited number of test locations and scenarios.

A comparison of the repeated wind-tunnel tests indicated that some test locations experienced relatively large variations in repeated wind-speed measurements. Accounting for variations at test location 16, both with and without the proposed building, it is impossible to distinguish the project-specific effects from the existing setting.

To identify a configuration of a new building on the project site that would clearly bring the winds along Washington Street into conformance with the hazard criterion, shorter and taller alternatives, setbacks from Washington Street, and street-level set-backs in the project were tested; none of those were found conclusively to improve the existing hazard condition.

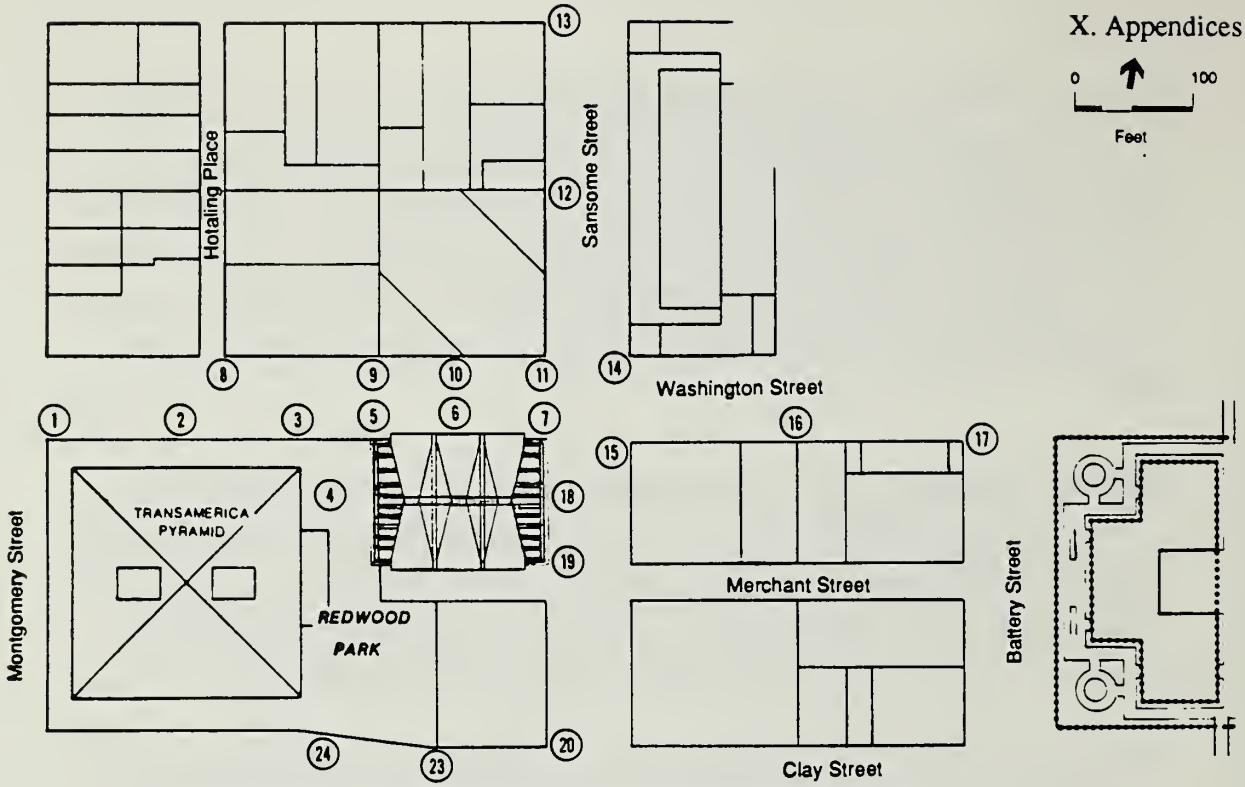
NOTES - Wind Study Methodology

/1/ Equivalent mean wind speed is defined as the mean wind, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45.

/2/ Arens, E., "Designing for Acceptable Wind Environment," Transactions Engineering Journal, ASCE 107, No. TE 2, p. 127-141, 1981.

/3/ Equivalent wind speed is an hourly wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians.

/4/ Murakami, S., "New Criteria for Wind Effects on Pedestrians," *Journal of Wind Engineering and Industrial Aerodynamics*, 7, p. 289-309, 1981.



Location	Criterion Speed (mph)	Existing Setting 10% Exc. Speed (mph)	Existing Setting % Time Criterion Exceeded	Project 10% Exc. Speed (mph)	Project % Time Criterion Exceeded
No. 1	11	12	2%	13	4%
No. 2	11	10		11	
No. 3	11	10		9	
No. 4	11	10		13	5%
No. 5	11	11		11	
No. 6	11	12	2%	10	
No. 7	11	13	6%	15	16%
No. 8	11	9		10	
No. 9	11	9		9	
No. 10	11	10		10	
No. 11	11	11		10	
No. 12	11	10		9	
No. 13	11	15	16%	16	21%
No. 14	11	15	12%	16	17%
No. 15	11	13	5%	12	3%
No. 16	11	20	31%	22	36%
No. 17	11	11		11	
No. 18	11	10		9	
No. 19	11	8		8	
No. 20	11	7		8	
No. 23	11	13	4%	11	
No. 24	11	12	2%	10	

Transamerica III ■

SOURCE: Bruce White, PhD.
ADAPTED BY: Environmental Science Associates, Inc. (3-2-90)
REVISED: 1-10-91

Figure B - 1
Locations for Wind Speed Measurements

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AN ANALYSIS OF THE REDWOOD TREES AT TRANSAMERICA PARK, SAN FRANCISCO, CALIFORNIA

JOB #12-89-408

Prepared at the Request of:
Mr. Richard Hampel
Skidmore, Owings & Merrill
333 Bush Street
San Francisco, California 94104

January 15, 1990

AN ANALYSIS OF THE REDWOOD TREES AT TRANSAMERICA PARK, SAN FRANCISCO, CALIFORNIA

Summary
Sixty-nine Sequoia sempervirens - Coast Redwood trees were analyzed on January 8 and January 11, 1990 to record trunk diameter at 4-1/2' from the ground, height and spread of each.

They were surveyed as well for health and structural characteristics and for usefulness as transplanted trees in a new landscape.

These latter evaluations are done on a 1 to 5 scale, #1 being the best, #5 the worst. As example, a tree with a health rating of 2 and a structural rating of 4 is not worth transplanting, while a tree with a health of 1 and a structure of 2 would be a useful tree.

As a general rule, the smallest diameter trees and/or trees in the middle of groves are of least value due to shading by adjacent specimens.

The specimens with the best form and hence the greatest possible use for transplanting are on the margins of stands where the light levels are highest, as would be expected.

Since sufficient space between each specimen leaves approximately the same soil mass for each tree for use in preparing selected individuals for transplanting, they should be considered more or less equal in ease of digging, aside from the obvious differences created by ease of access to individual due to proximity to pavement.

Respectfully submitted,

Barrie D. Coate

Barrie D. Coate

BDC:rn
Enclosures
FAX #415-543-3672

cc: Tom Klope, MPA Design

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Horticultural Consultant
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1=best; 5=worst

KEY #	NAME	DBH (in inches)	MULTI-STEM	DBH (in inches)	DBH (in inches)	HEIGHT	SPREAD	HEALTH (1-5)	STRUCTURE (1-5)	NEEDS THINNING	NEEDS ENDWEIGHT REMOVED	ROOT COLLAR COVERED	INSECTS	DISEASES	DEAD-WOOD (1-5)	MAN-MADE DAMAGE	TRUNK DECAY	USEFULNESS IN NEW LANDSCAPE	NEEDS WATER	RECOMMEND REMOVAL	RECOMMEND REPLACEMENT	PRIORITY	NOTE IN TEXT
1		18				35	22	1	2									2					
2		8				25	10	2	4									5					
3		12				35	15	1	2									3					
4		12				33	15	1	3									4					
5		11				30	15	1	3									3					
6		11				35	15	1	3									3					
7		13				30	15	1	3									3					
8		14				40	15	1	3									3					
9		12				25	15	1	4									4					
10		15				50	20	1	2									2					
11		11				40	12	1	3									3					
12		12				37	15	1	2									2					
13		17				50	16	1	1									1					
14		13				40	11	1	1									1					
15		11				35	10	2	3									4					
16		15				45	14	1	2									2					
17		12				50	15	1	2									2					

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1=best; 5=worst

KEY #	NAME	DBH (in inches)	MULTI-STEM	DBH (in inches)	DBH (in inches)	HEIGHT	SPREAD	HEALTH (1-5)	STRUCTURE (1-5)	NEEDS THINNING	NEEDS ENDWEIGHT REMOVED	ROOT COLLAR COVERED	INSECTS	DISEASES	DEAD WOOD (1-5)	MAN-MADE DAMAGE	TRUNK DECAY	USEFULNESS IN NEW LANDSCAPE	NEEDS WATER	RECOMMEND REMOVAL	RECOMMEND REPLACEMENT	PRIORITY	NOTE IN TEXT
18		10				40	12	1	4									4					
19		10				40	10	2	4						Leaning			5					
20		6				35	6	2	5									5					
21		17				45	15	1	4						Leaning			4	Co-dominant leader				
22		10				40	18	1	2									2					
23		15				48	12	1	3									4					
24		6				30	7	2	4									5					
25		14				42	15	1	2									1					
26		8				28	12	2	4									5					
27		14				40	18	1	2									2					
28		10				30	18	1	1									1					
29		4				21	6	1	4									5					
30		7				24	10	1	2									2					
31		17				40	15	1	2									1					
32		12				37	15	1	3									2					
33		9				25	10	2	3									3					
34		14				40	12	1	3									3					

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KEY #	NAME	DBH (in inches)	MULTI-STEM	DBH (in inches)	DBH (in inches)	HEIGHT	SPREAD	HEALTH (1-5)	STRUCTURE (1-5)	NEEDS THINNING	NEEDS ENDWEIGHT REMOVED	ROOT COLLAR COVERED	INSECTS	DISEASES	DEAD WOOD (1-5)	MAN-MADE DAMAGE	TRUNK DECAY	USEFULNESS IN NEW LANDSCAPE	NEEDS WATER	RECOMMEND REMOVAL	RECOMMEND REPLACEMENT	PRIORITY	NOTE IN TEXT
35		7				30	7	2	4									4					
36		7				30	7	2	4									5	✓				
37		12				40	11	1	3									3					
38		11				35	15	1	3									3					
39		15				40	12	1	3									3					
40		8				35	8	1	4									4					
41		6				25	10	2	4									4					
42		5				16	7	3	5									5	✓				
43		16				40	15	1	2									2					
44		14				43	20	1	2									1					
45		3				12	5	2	5									5	✓				
46		13				45	20	3	5									5	✓ Co-dominant leader				
47		12				45	18	1	2									2					
48		9				30	12	2	2									2					
49		9				22	12	1	2									1					
50		6				25	10	1	2									2					
51		6				24	10	2	3									3					

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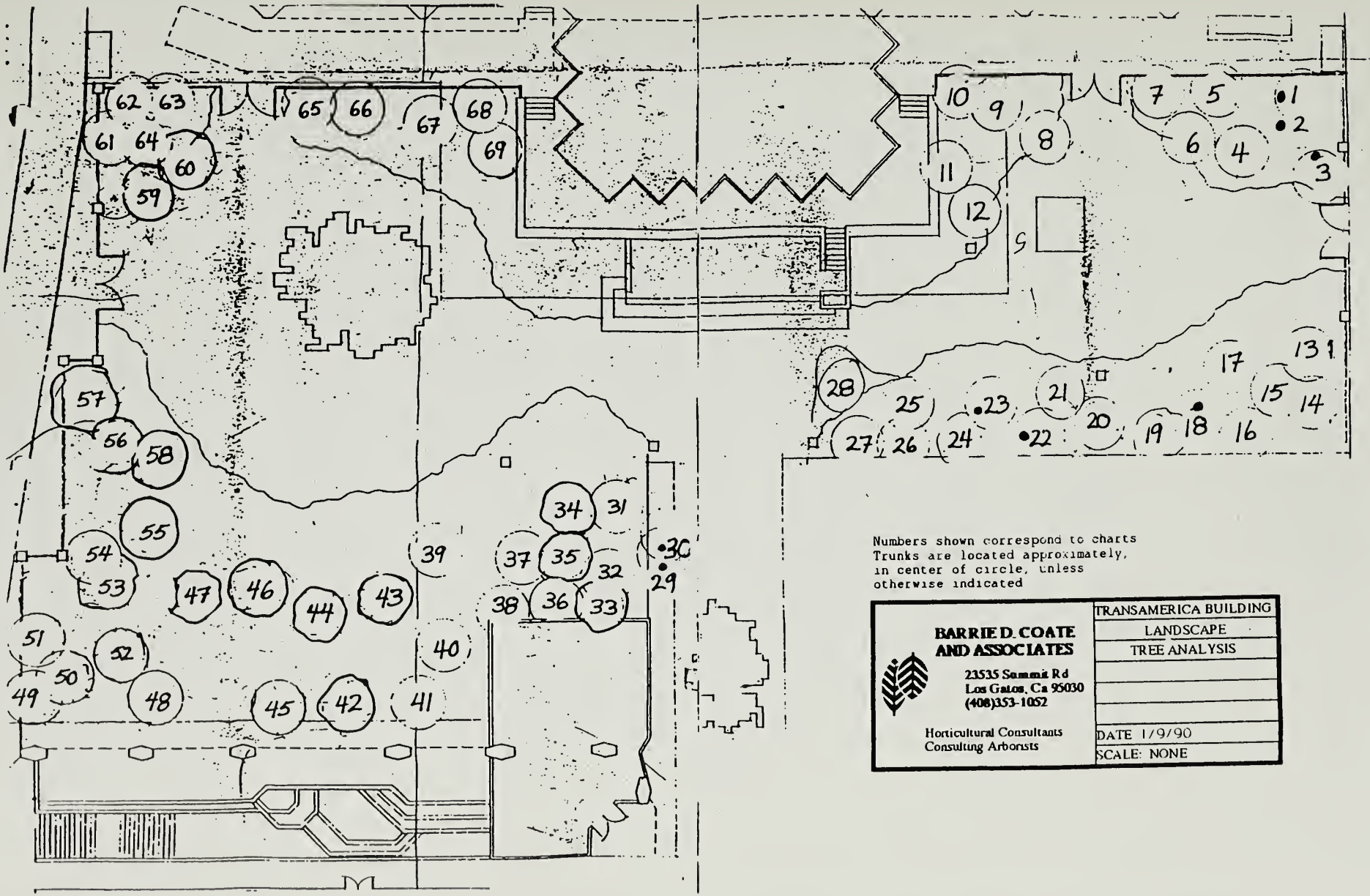
1=best; 5=worst

KEY #	NAME	DBH (in inches)	MULTI-STEM	DBH (in inches)	DBH (in inches)	HEIGHT	SPREAD	HEALTH (1-5)	STRUCTURE (1-5)	NEEDS THINNING	NEEDS ENDWEIGHT REMOVED	ROOT COLLAR COVERED	INSECTS	DISEASES	DEAD WOOD (1-5)	MAN-MADE DAMAGE	TRUNK DECAY	USEFULNESS IN NEW LANDSCAPE	NEEDS WATER	RECOMMEND REMOVAL	RECOMMEND REPLACEMENT	PRIORITY	NOTE IN TEXT
52		12				45	20	3	5									5	✓				
53		8				32	14	1	2									2					
54		10				32	15	1	2									1					
55		7				22	14	2	5									5	✓				
56		10				40	16	1	3									3					
57		15				42	20	1	2									1					
58		16				48	20	1	2									1					
59		13				30	18	1	3									3					
60		13				26	18	1	3									3					
61		10				30	10	2	5									5	✓	Bend in trunk			
62		6				18	10	2	4									5	✓				
63		15				32	20	1	2									1					
64		7				28	10	1	4									4					
65		12				23	15	1	2									2					
66		10				24	15	1	2									2					
67		11				30	15	1	2									2					
68		12				35	18	1	4									4	✓	Bend in trunk			
69		13				37	16	1	2									1					



Numbers shown correspond to charts
Trunks are located approximately,
in center of circle, unless
otherwise indicated

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Consulting Arborists

TRANSAMERICA BUILDING
LANDSCAPE
TREE ANALYSIS
DATE 1/9/90
SCALE: NONE

APPENDIX D: TRANSPORTATION

TABLE D-1: PASSENGER LEVELS OF SERVICE ON BUS TRANSIT

Level of Service	Description	Passengers per Seat
A	Level of Service A describes a condition of excellent passenger comfort. Passenger loadings are low with fewer than half the seats filled. There is little or no restriction on passenger maneuverability. Passenger loading times do not affect scheduled operation.	0.00-0.50
B	Level of Service B is in the range of passenger comfort with moderate passenger loadings. Passengers still have reasonable freedom of movement on the transit vehicle. Passenger loading times do not affect scheduled operations.	0.51-0.75
C	Level of Service C is still in the zone of passenger comfort, but loadings approach seated capacity and passenger maneuverability on the transit vehicle is beginning to be restricted. Relatively satisfactory operating schedules are still obtained as passenger loading times are not excessive.	0.76-1.00
D	Level of Service D approaches uncomfortable passenger conditions with tolerable numbers of standees. Passengers have restricted freedom to move about on the transit vehicle. Conditions can be tolerated for short periods of time. Passenger loadings begin to affect schedule adherence, as the restricted freedom of movement for passengers requires longer loading times.	1.01-1.25
E	Level of Service E passenger loadings approach manufacturers' recommended maximums and passenger comfort is at low levels. Freedom to move about is substantially diminished. Passenger loading times increase as mobility of passengers on the transit vehicle decreases. Scheduled operation is difficult to maintain at this level. Bunching of buses tends to occur, which can rapidly cause operations to deteriorate.	1.26-1.50
F	Level of Service F describes crush loadings. Passenger comfort and maneuverability are extremely poor. Crush loadings lead to deterioration of scheduled operations through substantially increased loading times.	1.51-1.60

SOURCE: Environmental Science Associates, Inc. from information in the *Interim Materials on Highway Capacity*, Transportation Research Circular 212, pp. 73-113, Transportation Research Board, 1980.

INBOUND **N-JUDAH** – Duboce and Church
8:30 a.m., Wednesday, March 21, 1990

OUTBOUND **N-JUDAH** – Van Ness Station
5:30 p.m., Tuesday, March 20, 1990

INBOUND **38L-GEARY** – Van Ness and O'Farrell
8:35 a.m., Thursday, March 22, 1990

OUTBOUND **L-TARAVAL** – Van Ness Station
5:25 p.m., Tuesday, March 20, 1990

SOURCE: Environmental Science Associates, Inc.

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Figure D-1
Photos of Muni Peak Loading Conditions

INBOUND **14-MISSION** – Mission and 24th Streets
7:35 a.m., Thursday, March 29, 1990

INBOUND **38L-GEARY** – O'Farrell and Van Ness
8:35 a.m., Thursday, March 29, 1990

SOURCE: Environmental Science Associates, Inc.

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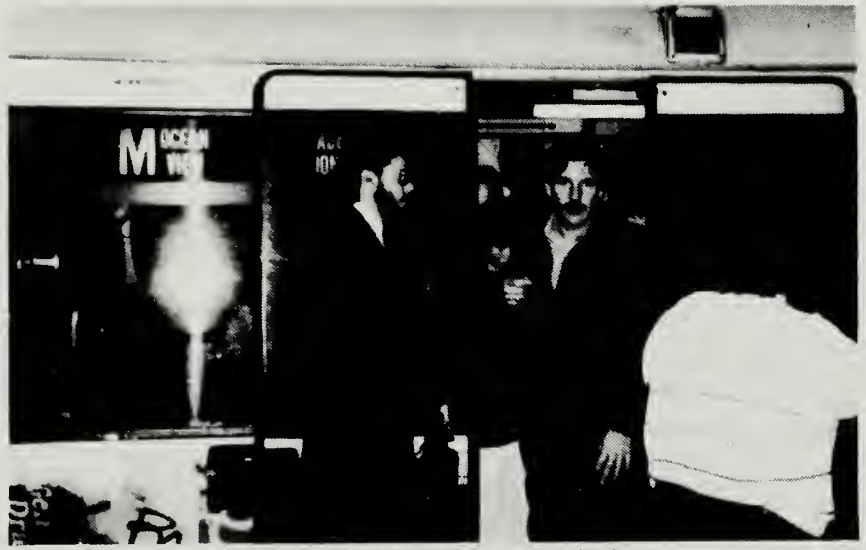
Figure D-1 (continued)
Photos of Muni Peak Loading Conditions



INBOUND **M-OCEANVIEW** – Civic Center Station
7:45 a.m., Thursday, March 29, 1990

OUTBOUND **J-CHURCH** – Van Ness Station
5:20 p.m., Thursday, March 29, 1990

INBOUND **K-INGLESIDE** – Civic Center Station
7:55 a.m., Thursday, March 29, 1990

OUTBOUND **L-TARAVAL** – Van Ness Station
5:45 p.m., Thursday, March 29, 1990

Transamerica III ■

SOURCE: Environmental Science Associates, Inc.

Figure D-1 (continued)
Photos of Muni Peak Loading Conditions

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made used the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, *Traffic Engineering*. This method is also explained in "Interim Materials on Highway Capacity", *Transportation Research Circular No. 212*, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-2). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio calculated by dividing the existing volume by the capacity at Level of Service E.

PEDESTRIAN ANALYSIS

The pedestrian analysis has been conducted following methods developed by Pushkarev and Zupan in *Urban Space for Pedestrians* (MIT Press, 1975). Table D-4 shows the relationship between pedestrian flow rates and the flow regimes (categories) used to describe levels of operation. Figure D-2 shows photographs of pedestrian conditions that correspond to the flow regimes.

TABLE D-2: VEHICULAR LEVELS OF SERVICE AT SIGNALIZED INTERSECTIONS

Level of Service	Description	Volume/Capacity (v/c) Ratio/a/
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	less than 0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.01+

/a/ Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering from *Highway Capacity Manual*, Highway Research Board, 1965

TABLE D-3: TRAFFIC LEVELS OF SERVICE FOR FREEWAYS

Level of Service	Description	Volume/Capacity (v/c) Ratio/a/
A	Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	0.00-0.60
B	Level of Service B is in the higher speed range of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted.	0.61-0.70
C	Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained.	0.71-0.80
D	Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
E	Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds (typicallyabout 30 to 35 mph) than in Level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.91-1.00
F	Level of Service F describes forced flow operation at low speeds (less than 30 mph), in which the freeway acts as storage for queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In the extreme, both speed and volume can drop to zero.	1.01+

/a/ Capacity is defined as Level of Service E.

SOURCE: Environmental Science Associates, Inc. from information in the *Highway Capacity Manual*, Special Report 87, Highway Research Board, 1965.

TABLE D-4: PEDESTRIAN FLOW REGIMEN

Flow Regime/a/	Choice	Conflicts	Flow Rate (p/f/m)/b/
Open	Free Selection	None	less than 0.5
Unimpeded	Some Selection	Minor	0.5 to 2.0
Impeded	Some Selection	High Indirect Interaction	2.1 to 6.0
Constrained	Some Restriction	Multiple	6.1 to 10.0
Crowded	Restricted	High Probability	10.1 to 14.0
	Design Limit - Upper Limit of Desirable Flow		
Congested	All Reduced	Frequent	14.1 to 18.0
Jammed	Shuffle Only	Unavoidable	Not applicable/c/

/a/ Photographs of these conditions are shown in Figure D-2.
/b/ P/F/M = Pedestrians per foot of effective sidewalk width per minute.
/c/ For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: *Urban Space for Pedestrians*, MIT Press, 1975, Cambridge, MA.

The borderline between IMPEDED and UNIMPEDED FLOW, with about 130 sq ft (12 m^2) per person, or a flow rate of about 2 people per min per ft (6.5 per m) of walkway width. Individuals as well as couples visible in this view have a choice of speed and direction of movement. This rate of flow is recommended for design of outdoor walkways in office districts and other less dense parts of downtown areas.

The uneven nature of UNIMPEDED FLOW. While the people walking in the plaza which is 17 ft (5.2 m) wide, compared to 23 ft (7 m) in the preceding picture have almost 130 sq ft (12 m^2) per person on the average, the space allocation for the eight individuals in the foreground is closer to 70 sq ft (6.4 m^2). Thus, indirect interaction with others is still quite frequent in the upper range of UNIMPEDED FLOW.

The midpoint of the IMPEDED FLOW range, with about 75 sq ft (6.9 m^2) per person, or a flow rate of about 4 people per min per ft (13 per m) of walkway width. Physical conflicts are absent, but pedestrian navigation does require constant indirect interaction with others. This rate of flow is recommended as an upper limit for the design of outdoor walkways in shopping districts and other dense parts of downtown areas.

Lower range of UNIMPEDED movement, approaching OPEN FLOW. About 350 sq ft (32.2 m^2) per person, or a flow rate of less than 1 person per min per ft (3.3 per m) of walkway width. Complete freedom to select the speed and direction of movement; individuals behave quite independently of each other. For a design standard based solely on pedestrian density, this amount of space can be considered excessive.

SOURCE: Pushdarev and Zupan

Transamerica III ■

Figure D-2
Photos of Pedestrian Flow Levels

JAMMED FLOW. Space per pedestrian in this view is about 3.8 sq ft (0.35 m^2). This is representative of the lower half of the speed-flow curve, where only shuffling movement is possible and even the extremely uncomfortable maximum flow rate of 25 people per min per ft (82 per m) of walkway width cannot be attained due to lack of space. Photograph by Louis B. Schlivek.

The threshold of CONGESTED FLOW. The first eleven people in the view have about 16 sq ft (1.5 m^2) per person, corresponding to a flow rate of about 15 people per min per ft (49 per m) of walkway width. The beginnings of congestion are evident in bodily conflicts affecting at least three of the walkers, and in blocked opportunities for walking at a normal pace.

The onset of CROWDED FLOW, with an average of about 24 sq ft (2.2 m^2) per person, or a flow rate of about 10 people per min per ft (33 per m) of walkway width. Choice of speed is partially restricted, the probability of conflicts is fairly high, passing is difficult. Voluntary groups of two, of which two can be seen in the picture, are maintained, but cause interference. Note also some overflow into the vehicular roadway in the background.

The midpoint of the CONSTRAINED FLOW range, with about 30 sq ft (2.8 m^2) per person, or a flow rate of about 8 people per min per ft (26 per m) of walkway width. The choice of speed is occasionally restricted, crossing and passing movements are possible, but with interference and with the likelihood of conflicts. The man in the dark suit seems to be able to cross in front of the two women in the foreground quite freely, but in the background near the curb people are having difficulty with passing maneuvers.

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SOURCE: Pushdarev and Zupan

Figure D-2 (continued)
Photos of Pedestrian Flow Levels

TABLE D-5: PARKING DEMAND CALCULATIONS

PARKING METHODOLOGY

Taking into consideration existing office and retail space on the project site that was partially occupied by tenants as of late 1989 (22,500 gsf and 4,050 gsf, respectively), the project would effectively add about 113,500 gsf of new office space and 4,550 gsf of new retail space to the site, and new employment would be about 450 persons. All demand analyses for the project and alternatives below are based on net new occupied space. All totals are rounded to the nearest whole number.

Long Term Parking Demand:

$$\frac{\text{Office Space gsf}}{20{,}000} + \left(\frac{\text{Office Space GSF}}{275 \text{ GSF/employee}} \times 0.11\right) + \left(\frac{\text{Retail GSF}}{350 \text{ GSF/employee}} \times 0.15\right) = \text{Long Term Parking Demand}$$

Short Term Parking Demand:

$$\frac{\text{Office Space gsf}}{20{,}000} + \frac{\text{Retail GSF}}{1{,}000} = \text{Short Term Parking Demand}$$

Total Parking Demand:

Long Term Parking Demand + Short Term Parking Demand = Total Parking Demand

EXISTING

Existing Long Term Parking Demand

$$\frac{22{,}500}{20{,}000} + \left(\frac{22{,}500}{275} \times 0.11\right) + \left(\frac{4{,}050}{350} \times 0.15\right) = 1.1 + 9.0 + 1.7 = 12$$

Existing Short Term Parking Demand

$$\frac{22{,}500}{20{,}000} + \frac{4{,}050}{1{,}000} = 1.1 + 4.0 = 5$$

Total Existing Parking Demand

12 + 5 = 17

(Continued)

TABLE D-5: PARKING DEMAND CALCULATIONS (Continued)

PROJECT

Project Long Term Parking Demand

$$\frac{113{,}500}{20{,}000} + \frac{(113{,}500 \times 0.11)}{275} + \frac{(4{,}550}{350} \times 0.15) = 5.7 + 45.4 + 2.0 = 53$$

Project Short Term Parking Demand

$$\frac{113{,}500}{20{,}000} + \frac{4{,}550}{1{,}000} = 5.7 + 4.5 = 10$$

Total Project Parking Demand

53 + 10 = 63

ALTERNATIVE A: NO PROJECT (REOCCUPIED 545 SANSOME STREET BUILDING)

Alternative A Long Term Parking Demand

$$\frac{56{,}000}{20{,}000} + \frac{(56{,}000 \times 0.11)}{275} + \frac{(0}{350} \times 0.15) = 2.8 + 22.4 + 0 = 25$$

Alternative A Short Term Parking Demand

$$\frac{56{,}000}{20{,}000} + \frac{0}{1{,}000} = 3.0 + 0 = 3.0$$

Total Alternative A Parking Demand

25 + 3 = 28

ALTERNATIVE B: NO NEW SHADOW ON MARITIME PLAZA

Alternative B Long Term Parking Demand

$$\frac{92{,}300}{20{,}000} + \frac{(92{,}300 \times 0.11)}{275} + \frac{(4{,}550}{350} \times 0.15) = 4.6 + 36.9 + 2.0 = 44$$

Alternative B Short Term Parking Demand

$$\frac{92{,}300}{20{,}000} + \frac{4{,}550}{1{,}000} = 4.6 + 4.5 = 9$$

Total Alternative B Parking Demand

44 + 9 = 53

(Continued)

TABLE D-5: PARKING DEMAND CALCULATIONS (Continued)

ALTERNATIVE C: PROJECT WITH NO CONDITIONAL USE AUTHORIZATION REQUIRED FOR PARKING

Alternative C Long Term Parking Demand

$$\frac{113,500}{20,000} + \left(\frac{113,500}{275} \times 0.11\right) + \left(\frac{4,550}{350} \times 0.15\right) = 5.7 + 45.4 + 2.0 = 53$$

Alternative C Short Term Parking Demand

$$\frac{113,500}{20,000} + \frac{4,500}{1,000} = 5.7 + 4.5 = 10$$

Total Alternative C Parking Demand

53 + 10 = 63

ALTERNATIVE D: PROJECT WITH NO PARKING

Alternative D Long Term Parking Demand

$$\frac{113,500}{20,000} + \left(\frac{113,500}{275} \times 0.11\right) + \left(\frac{4,550}{350} \times 0.15\right) = 5.7 + 45.4 + 2.0 = 53$$

Alternative D Short Term Parking Demand

$$\frac{113,500}{20,000} + \frac{4,500}{1,000} = 5.7 + 4.5 = 10$$

Total Alternative D Parking Demand

53 + 10 = 63

ALTERNATIVE E: RETAIN 545 SANSOME AND 501-505 WASHINGTON AND CONSTRUCT 47,500 GSF OFFICE AT 517 WASHINGTON

Alternative E Long Term Parking Demand

$$\frac{81,600}{20,000} + \left(\frac{81,600}{275} \times 0.11\right) + \left(\frac{-2,050}{350} \times 0.15\right) = 4.1 + 32.6 + -0.9 = 36$$

Alternative E Short Term Parking Demand

$$\frac{81,600}{20,000} + \frac{-2,050}{1,000} = 4.1 + -2.0 = 2$$

Total Alternative E Parking Demand

36 + 2 = 38

(Continued)

TABLE D-5: PARKING DEMAND CALCULATIONS (Continued)

ALTERNATIVE F: TALLER BUILDING WITH SMALLER FLOOR SIZES AND LARGER ADDITION TO REDWOOD PARK

Alternative F Long Term Parking Demand

$$\frac{140{,}500}{20{,}000} + \left(\frac{140{,}500}{275} \times 0.11\right) + \left(\frac{700}{350} \times 0.15\right) = 7.0 + 56.2 + 0.3 = 64$$

Alternative F Short Term Parking Demand

$$\frac{140{,}500}{20{,}000} + \frac{700}{1{,}000} = 7.0 + 0.7 = 8$$

Total Alternative F Parking Demand

64 + 8 = 72

PARKING METHODOLOGY

All demand analyses for the project and alternatives below are based on total space in the proposed project or alternatives. All totals are rounded to the nearest whole number.

Long Term Parking Demand:

$$\frac{\text{Office Space gsf}}{20{,}000} + \left(\frac{\text{Office Space GSF}}{275 \text{ GSF/employee}} \times 0.11\right) + \left(\frac{\text{Retail GSF}}{350 \text{ GSF/employee}} \times 0.15\right) = \text{Long Term Parking Demand}$$

Short Term Parking Demand:

$$\frac{\text{Office Space gsf}}{20{,}000} + \frac{\text{Retail GSF}}{1{,}000} = \text{Short Term Parking Demand}$$

Total Parking Demand:

Long Term Parking Demand + Short Term Parking Demand = Total Parking Demand

PROJECT

Project Long Term Parking Demand

$$\frac{135{,}775}{20{,}000} + \left(\frac{135{,}775}{275} \times 0.11\right) + \left(\frac{8{,}600}{350} \times 0.15\right) = 6.8 + 54.3 + 3.7 = 65$$

Project Short Term Parking Demand

$$\frac{135{,}775}{20{,}000} + \frac{8{,}600}{1{,}000} = 6.8 + 8.6 = 15$$

Total Project Parking Demand

65 + 15 = 80

(Continued)

TABLE D-5: PARKING DEMAND CALCULATIONS (Continued)

ALTERNATIVE A: NO PROJECT (REOCCUPIED 545 SANSOME STREET BUILDING)

Alternative A Long Term Parking Demand

$$\frac{79{,}100}{20{,}000} + \left(\frac{79{,}100}{275} \times 0.11\right) + \left(\frac{4{,}050}{350} \times 0.15\right) = 4.0 + 31.6 + 1.7 = 37$$

Alternative A Short Term Parking Demand

$$\frac{79{,}100}{20{,}000} + \frac{4{,}050}{1{,}000} = 4.0 + 4.0 = 8.0$$

Total Alternative A Parking Demand

37 + 8 = 45

ALTERNATIVE B: NO NEW SHADOW ON MARITIME PLAZA

Alternative B Long Term Parking Demand

$$\frac{114{,}800}{20{,}000} + \left(\frac{114{,}800}{275} \times 0.11\right) + \left(\frac{8{,}600}{350} \times 0.15\right) = 5.7 + 45.9 + 3.6 = 55$$

Alternative B Short Term Parking Demand

$$\frac{114{,}800}{20{,}000} + \frac{8{,}600}{1{,}000} = 5.7 + 8.6 = 4$$

Total Alternative B Parking Demand

55 + 14 = 69

ALTERNATIVE C: PROJECT WITH NO CONDITIONAL USE AUTHORIZATION REQUIRED FOR PARKING

Alternative C Long Term Parking Demand

$$\frac{135{,}775}{20{,}000} + \left(\frac{135{,}775}{275} \times 0.11\right) + \left(\frac{8{,}600}{350} \times 0.15\right) = 6.8 + 54.3 + 3.7 = 65$$

Alternative C Short Term Parking Demand

$$\frac{135{,}775}{20{,}000} + \frac{8{,}600}{1{,}000} = 6.8 + 8.6 = 15$$

Total Alternative C Parking Demand

65 + 15 = 80

ALTERNATIVE D: PROJECT WITH NO PARKING

Alternative D Long Term Parking Demand

$$\frac{135{,}775}{20{,}000} + \left(\frac{135{,}775}{275} \times 0.11\right) + \left(\frac{8{,}600}{350} \times 0.15\right) = 6.8 + 54.3 + 3.7 = 65$$

(Continued)

TABLE D-5: PARKING DEMAND CALCULATIONS (Continued)

Alternative D Short Term Parking Demand

$\frac{135,775}{20,000} + \frac{8,600}{1,000} = 6.8 + 8.6 = 15$

Total Alternative D Parking Demand

65 + 15 = 80

ALTERNATIVE E: RETAIN 545 SANSOME AND 501-505 WASHINGTON AND CONSTRUCT 47,500 GSF OFFICE AT 517 WASHINGTON

Alternative E Long Term Parking Demand

$\frac{104,000}{20,000} + \left(\frac{104,000}{275} \times 0.11\right) + \left(\frac{2,000}{350} \times 5.2\right) = 41.6 + 0.9 = 48$

Alternative E Short Term Parking Demand

$\frac{104,000}{20,000} + \frac{2,000}{1,000} = 5.2 + 2.0 = 7$

Total Alternative E Parking Demand

48 + 7 = 55

ALTERNATIVE F: TALLER BUILDING WITH SMALLER FLOOR SIZES AND LARGER ADDITION TO REDWOOD PARK

Alternative F Long Term Parking Demand

$\frac{163,000}{20,000} + \left(\frac{163,000}{275} \times 0.11\right) + \left(\frac{4,750}{350} \times 0.15\right) = 8.2 + 65.2 + 2.0 = 75$

Alternative F Short Term Parking Demand

$\frac{163,000}{20,000} + \frac{4,750}{1,000} = 8.2 + 4.8 = 13$

Total Alternative F Parking Demand

75 + 13 = 88

SOURCE: Environmental Science Associates, Inc.

APPENDIX E: AIR QUALITY

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY, 1986-1988 /a/

POLLUTANT:	STANDARD Federal/b/	STANDARD State/c/	1986	1987	1988
OZONE (O_3) (Oxidant)					
1-hour concentration, ppm					
Highest hourly average	0.12/d/	0.10	0.07	0.09	0.09
Number of violations			0	0	0
CARBON MONOXIDE (CO)					
1-hour concentration, ppm					
Highest hourly average	35	20	9.0	9.0	9.0
Number of violations			0	0	0
8-hour concentration, ppm					
Highest 8-hour average	9	9	12.6/e/	10.0/e/	12.8/e/
Number of violations			2	1	1
TOTAL SUSPENDED PARTICULATE (TSP)					
24-hour concentration, ug/m^3					
Highest 24-hour average	260	100/f/	124	136	113
Number of violations of previous standard			5	3	1
Annual concentration, ug/m^3					
Annual Geometric Mean/g/		60/f/	52	61	41
Annual excess			No	Yes	No
PARTICULATE MATTER-10 MICRON (PM_{10})					
24-hour Average (ug/m^3)	150	50			
Highest 24-hour average			--	65	117
Number of violations			--	4	5
LEAD (Pb)					
30-day concentration, mg/m^3					
Highest 30-day average		1.5	0.2	0.1	0.1
Number of violations			0	0	0
NITROGEN DIOXIDE (NO_2)					
1-hour concentration, ppm					
Highest hourly average		0.25	0.11	0.15	0.12
Number of violations	None		0	0	0

(Continued)

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1986-1988 (CONTINUED)

POLLUTANT:	STANDARD		1986	1987	1988
	Federal/b/	State/c/			
SULFUR DIOXIDE (SO_2)					
24-hour concentration, ppm					
Highest 24-hour average	0.14	0.05	0.010	0.010	0.013
Number of violations			0	0	0

NOTE: ppm = parts per million.
ug/m^3 = micrograms per cubic meter.
mg/M^3 = milligrams per cubic meter.

/a/ Data through September 1986 were collected at 900 23rd Street. October 1986 to present data is a consolidation of measurements taken at 900 23rd Street and 10 Arkansas Avenue.
/b/ Federal standard, not to be exceeded more than once per year, except for annual average standards, which are not to be exceeded.
/c/ State standard, not to be equaled or exceeded, except for CO standards, which are not to be exceeded.
/d/ The federal standard is in terms of Expected Annual Excesses which is based on a three-year running average.
/e/ This CO is measured at a special measurement station at Ellis Street for street level maximums, referred to as a microscale site.
/f/ The California ARB has redefined the state particulate standard to apply to "inhalable" particulates only (i.e., those which have a diameter less than or equal to ten microns). The new standards are 50 ug/m^3 for 24-hour averages and 30 ug/m^3 for the annual geometric mean.
/g/ The annual geometric mean is a single number which applies to an entire year of data. "No" indicates that TSP concentrations did not exceed $60(ug)m^3$.

SOURCE: California Air Resources Board, 1986 - 1988, *California Air Quality Data.*

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